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Robots

A Reading A-Z Level T Benchmark Book

Word Count: 1,221

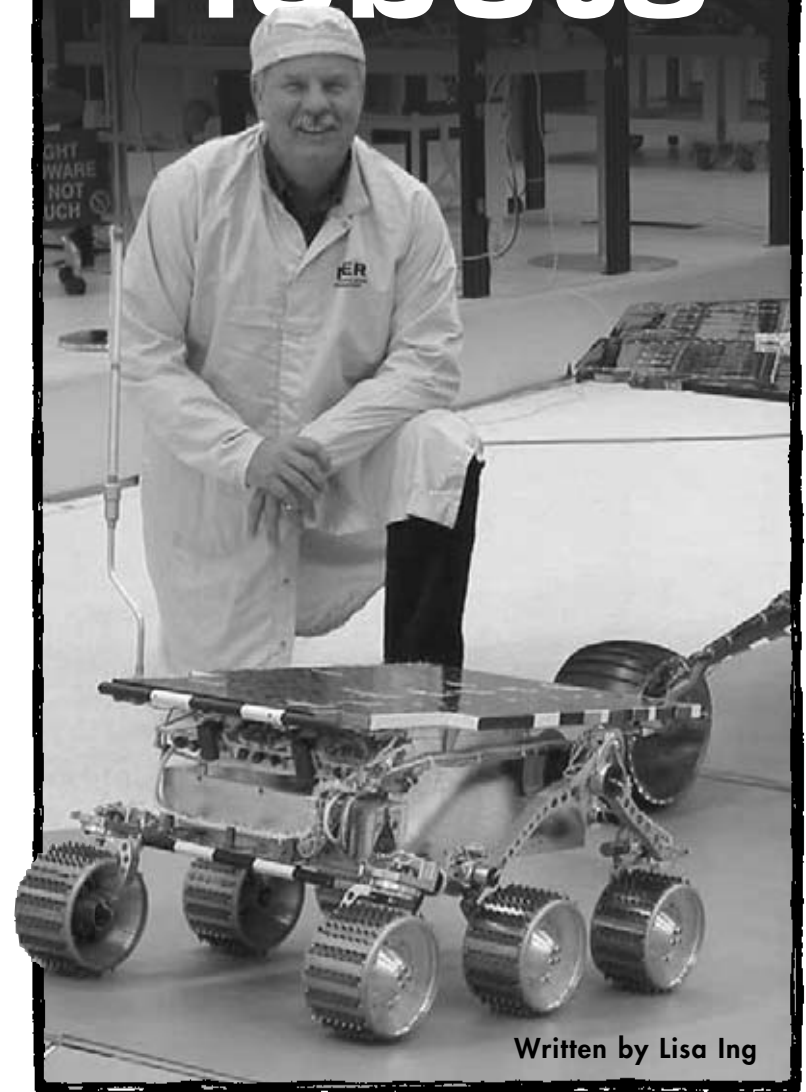



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Robots



Written by Lisa Ing

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Robots



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Front cover: A scientist poses with Sojourner, a Mars rover.

Back cover: Dante II crawls near the mouth of an active volcano.

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Level T Benchmark Book
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Correlation

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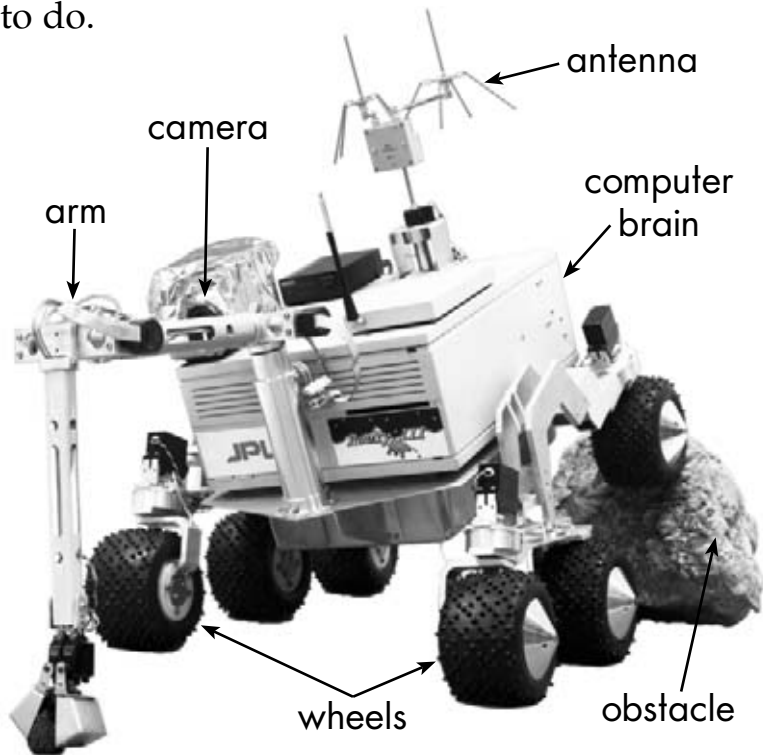


The human-like Robot and his "family" from the TV show *Lost in Space*

What Are Robots?

You may think of robots as the human-like machines you've seen in movies, television shows, and books. But in real life, robots aren't as advanced as R2D2 from *Star Wars*. Most robots cannot imitate humans or think for themselves. However, real robots can do many interesting things. They can perform dangerous tasks such as exploring active volcanoes, visiting distant planets, and **defusing** bombs. They can also do more common tasks such as build cars and play chess. Perhaps one day people will be able to build robots as smart as humans.

Robots are machines with mechanical bodies, information sensors, and computer brains. Most robots can move or have moving parts. Many robots can also use devices like video cameras and microphones to act as their “eyes” and “ears” to gather information from the world around them. Robots are programmed to perform certain tasks, either independently or by remote control. The program plans every step of the robot’s job in **painstaking** detail. Most robots cannot do anything that they have not been programmed to do.



Assembly line arm

The space shuttle's arm



Mars rover gathering samples

Simple robots can perform simple tasks, such as moving car parts on an assembly line. For this job, the robot only needs one arm, a sensor that tells it where the parts are, and a program that governs lifting the part and putting it down in the right place.

As robots get more complex, more programs have to be packed into their computer brains. It is much easier to build ten robots to do ten different things than it is to build one robot to do those ten things. Therefore, robots tend to be **specialized** for the tasks they perform. A huge robot arm looks very different from a small explorer robot, and they could not do each other’s job.

Tireless Workers

Imagine working at a job picking up nails and putting them into boxes as they pass through an assembly line. Imagine that this is the only thing you do all day and night, and you never get to take breaks to eat, sleep, or go to the bathroom.

No human being wants to do this job—within a few minutes, you'd be bored and unable to focus. After a while, you'd be tired, cranky, and exhausted. But robots do this job perfectly every time, without complaining.

The word “robot” comes from the Czech word *robota*, which means “forced **labor**,” or hard, boring work. In fact, most robots in operation today are factory robots. Many are simple robot arms of varying designs. Some can grip pieces of metal while others weld them together, and still others drill or spray-paint parts. Robot arms with a lighter touch can sort items, such as chocolates and tiny screws.



Robots building trucks in a factory



This robot is defusing a pipe bomb.

Dangerous Situations

Robots can go places that are too dangerous for humans. After an accident at a nuclear power plant in 1979, officials sent in robots to evaluate the damage and help clean up. The **radiation** from the nuclear accident would have killed any living creature. Nuclear plants currently in operation use remote-controlled robots to move **radioactive** equipment and conduct inspections.

Some robots can locate and defuse bombs and land mines. In addition to being much more precise and sensitive than human experts, these robots are also replaceable if the bombs explode. Other robots actually are bombs! These robots, called “smart missiles” or “smart bombs,” contain sensors that detect the target and battery-run computers that control the flight path.

Robot Explorers

Robots that are built to explore are particularly advanced and interesting. Dante II is an eight-legged crawler robot built to get super-heated gas samples from inside Mount Spurr, an Alaskan volcano. It was damaged during its mission, but Dante II successfully **obtained** its samples. The year before, eight scientists died trying to get samples of the volcanic gases.

The remote-controlled Nomad robot explored the Atacama Desert in Chile, traveling 214 kilometers (133 mi) in 45 days while collecting rock and soil samples. The Atacama Desert is similar to the terrain on the Moon and Mars. Next, Nomad will explore icy Antarctica.



Dante II



The Mars explorer robot Opportunity/Spirit

The Spirit and Opportunity robots explored the surface of Mars in 2004. These identical robots were programmed to act as **geologists**, or scientists who study rocks. They were equipped with tiny rock drills, microscopes, and instruments that can tell what rocks are made of. Scientists controlled these robots by sending radio signals over 78 million kilometers (48 million mi) through space.

Robots don't need food, water, or air. They don't age or get bored, and they don't even need a return trip home. For these reasons, much future space exploration will involve robots rather than people.

Mechanical Animals

People have tried to build human-like robots for decades. The problem is that it's hard for robots to imitate human **versatility**, or the ability to do many things. In fact, the more automatic a task is for a human, the harder it is to program a robot to do it. Every person learned to walk, but after that, we do it by instinct. It is hard to program **top-down processing**, where robots have big, complex programs that control many different movements and processes.

Scientists have developed robot animals that use **bottom-up processing**. This means that scientists program a robot to perform only one very simple task, such as rolling or walking on many legs. Then, the scientists add more simple programs one-by-one. This idea began with robots that imitate insects. These tiny bug-bots move and react just like insects, and can send signals to each other.



Simple bug-like robots make great toys.



A robot dog that can move and obey commands

Some scientists have developed robot animals as a way to research the way real animals act. Robo-tuna, Wanda, and Rodolph are robots that recreate the way fish swim and dolphins use sonar.

Several companies have manufactured robot dogs as expensive toys and companions. These dogs bark, move, and perform tricks. More advanced models can recognize their owners' voices and respond with actions or flashing lights.

Robot Intelligence

The computer Deep Blue faced off against Grand Master chess player Garry Kasparov in a six-game series. Even though Deep Blue could calculate up to 100 million moves per second, Kasparov won.

A year later, Deep Blue and Kasparov faced each other again. Before the rematch, Deep Blue was improved so that it was twice as fast. This time, the computer beat the world's best human chess player.



Garry Kasparov loses to Deep Blue in 1997.

This is pretty amazing, but Deep Blue isn't really smarter than Garry Kasparov. Deep Blue does not think at all. It looks through its database of possible chess moves. Then, it calculates which move or strategy has the best mathematical chance of winning the current game. So in a sense, Deep Blue is something like an extremely powerful calculator—it does not “think.” And Deep Blue can only play chess, while Garry Kasparov can walk, talk, write, and do all the other things that humans do.

True **artificial intelligence**, or AI, involves human-level intelligence. It involves the ability to learn, react to new information, and make decisions independently. Scientists are still working on creating computers and robots with real AI.

Do You Know?

The Turing Test measures whether a computer is intelligent enough to appear human. A judge communicates with a human and a computer at the same time. If the judge cannot tell the difference, the computer (and the scientists behind it) wins. To beat this test—and to react to the billions and billions of possible questions a human judge could ask—a computer has to be truly intelligent.



A human-looking robot vacuum

Conclusion

All of us depend on robots, but few people ever see the robots that keep our lives running. In the future, we might see robots that clean house, mow lawns, and respond to voice commands. But even the best robots will never be able to replace people. Humans are creative and adaptable, and even the most advanced robots are not.

Do You Know?

There might be a robot in your family's car. Some windshield wipers turn on automatically when it begins to rain. The wipers have sensors and computers that turn the wipers on and off. These wipers are robot arms.

Glossary

artificial intelligence (<i>n.</i>)	a computer program that can make decisions, respond, and think (p. 14)
bottom-up processing (<i>n.</i>)	programming that combines small, simple programs into a whole (p. 11)
defusing (<i>v.</i>)	taking an explosive device apart so that it doesn't blow up (p. 4)
geologists (<i>n.</i>)	scientists who study rocks (p. 10)
labor (<i>n.</i>)	hard, boring, physical work (p. 7)
obtained (<i>v.</i>)	got; picked up (p. 9)
painstaking (<i>adj.</i>)	taking a lot of detailed effort and thought (p. 5)
radiation (<i>n.</i>)	a powerful, dangerous form of energy that can cause burns, sickness, and death (p. 8)
radioactive (<i>adj.</i>)	gives off radiation (p. 8)
specialized (<i>adj.</i>)	to be made to perform just one task (p. 6)
top-down processing (<i>n.</i>)	programming that puts one complicated intelligence or thought process in charge of all other processes (p. 11)
versatility (<i>n.</i>)	the ability to do many different things (p. 11)

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Reading a-z Running Record

Level T

Student's Name _____ Date _____

Robots
177 words

Have the student read out loud as you record.

Assessed by _____

page	E = errors S-C = self-correction M = meaning S = structure V = visual	E	S-C	E			S-C		
				M	S	V	M	S	V
4	What Are Robots? You may think of robots as the human - like machines you've seen in movies, television shows, and books. But in real life, robots aren't as advanced as R2D2 from Star Wars. Most robots cannot imitate humans or think for themselves. However, real robots can do many interesting things. They can perform dangerous tasks such as exploring active volcanoes, visiting distant planets, and defusing bombs. They can also do more common tasks such as build cars and play chess. Perhaps one day people will be able to build robots as smart as humans.								
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Totals									

Accuracy Rate:

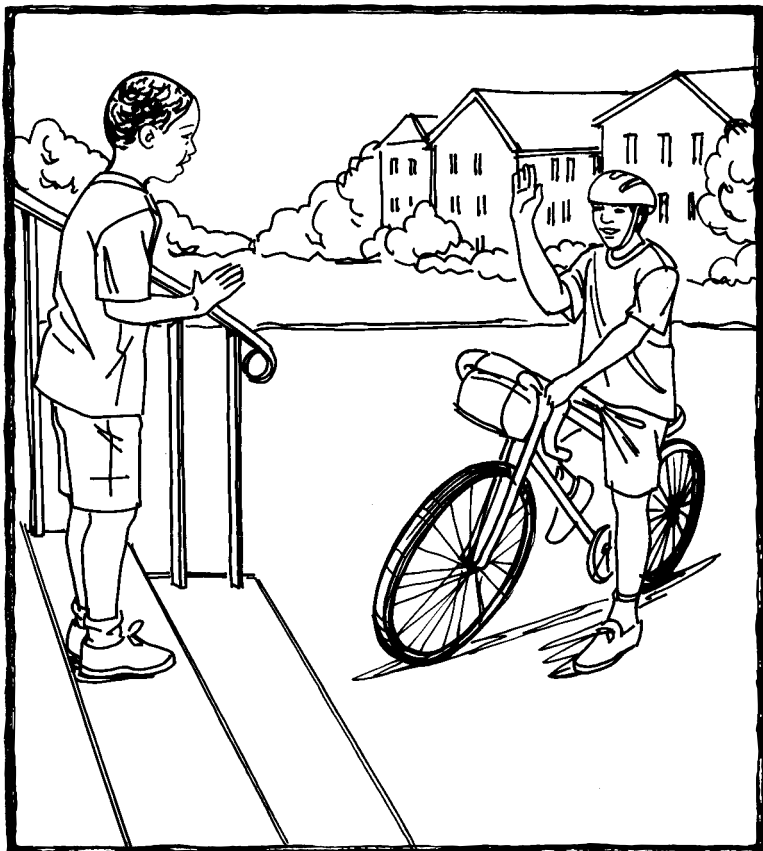
Error Rate:

Self-correction Rate:

The Ant in the Photograph

A Reading A-Z Level T Benchmark Book

Word Count: 1,187

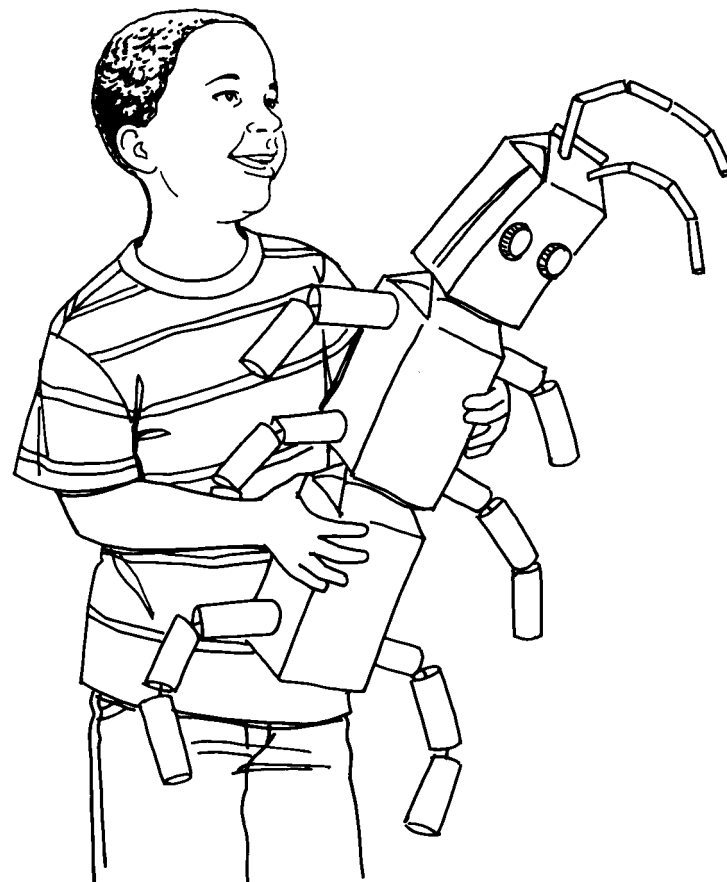



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The Ant in the Photograph



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Correlation

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Reading Recovery	23
DRA	38

Tonight was Parents' Night for Mr. Casey's third-grade classroom. Daron was excited. He felt like a balloon filled close to bursting. He rushed through his favorite dinner. He did his math homework as fast as he could. He begged his mom to please let him walk the dog *after* Parents' Night. Finally, Daron and his mom arrived at school.

"My project is right over there," Daron said, pulling his mom across the classroom. They wove around rows of desks then stopped in front of the art table.

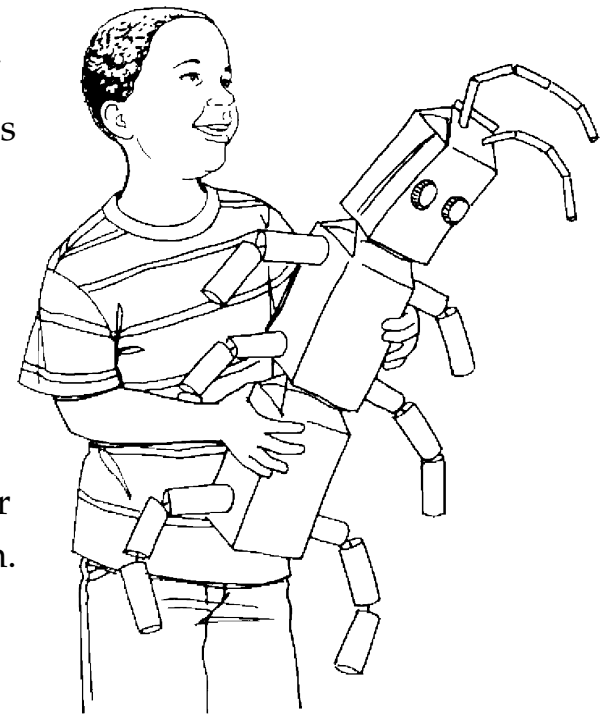


"Here it is!" Daron proudly pointed to a **sculpture** of a brightly painted, giant ant. "I **recycled** stuff that was being thrown away like milk cartons and bottle caps. Can you tell that the legs are old toilet paper tubes?"

"You did a great job," Daron's mom said. "It's as colorful as a circus clown."

"Thanks. It took me almost a whole week to make it," Daron said.

Let's take a **photograph** of you with it," his mom said as she pulled her **camera** out of its blue bag. Daron picked up his ant, held it high, and grinned for the photograph.



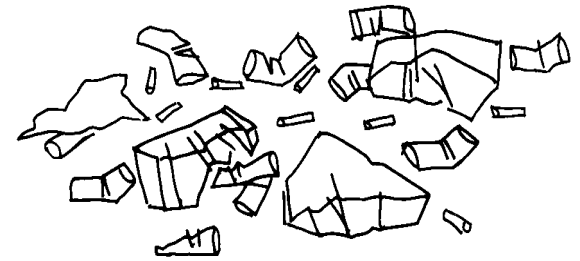
"Be careful with that," his mom warned, placing the camera back in its bag. "I'm not ready to leave yet."

Daron put the ant down and followed his mom as she toured the room.

Returning to his ant, Daron said happily, "I can't wait to show my ant to Dad when he gets home from his business trip." He held his ant high and **admired** it. But in his excitement, Daron didn't notice a book on the floor. When he stepped on it, his feet flew out from under him as if he'd stepped on a banana peel. He and his ant crashed to the floor.



"Oh no, it's **ruined!**" Daron exclaimed when he saw pieces of his ant littering



the floor. He picked up the flattened milk cartons, twisted straws, and ripped paper that had made up his ant. "There's no way I can fix it," he moaned, "and Dad never saw it."

"I'm sorry, Daron," his mom said, helping him pick up the last pieces of his ant.

"I hope the photograph of it turns out," said Daron.

"Good thinking," his mom replied. "Dad will like to see that." She put the last of the ant sculpture pieces in the wastebasket. "Are you ready to go? We can stop at the house, pick up the dog, and go to Elm Creek Park to walk him if you want."

"I guess," Daron said with a sad shrug.

The next afternoon, the school bell rang and kids piled out of the building. Daron followed the crowd toward the buses but stopped when he heard his name.

"Hi, Mom," he said when he spied her. "What are you doing here? Did you get the photograph from last night?"

"No, unfortunately, I can't find the camera," she said.

"But you're a mom, you never lose things," Daron said.



"Maybe I left it at school last night," his mom said. "Will you help me search the lost and found?" But after digging through mountains of sweatshirts and sweaters, sorting through mismatched mittens and gloves, looking at socks, hats and scarves, they did not find the camera.



"Let's go to the office and ask whether anyone turned it in," Daron suggested, his voice filled with worry. But no one in the office had seen it either.

"What if we never find it, Mom?" Daron asked as they walked to the car. "You don't have your nice camera anymore, and I don't have a picture to show Dad."

"Well," his mom said thoughtfully, "I'll check the apartment one more time. If it's not there, we may just have to hope for the kindness of a stranger."

"Was our name and telephone number on the camera?" Daron asked.

"I don't remember," his mom answered. "I sure hope so."



Daron sat at the kitchen table the next evening practicing spelling words with his mom when the telephone rang. He wrote a few words while he waited for her, but it was hard to **concentrate**. A gloomy cloud hung over his head. There was still no sign of the lost camera. He had tried to make another ant sculpture, but the whole thing fell apart when he started to paint it before the glue dried. Now he had run out of time. His dad was coming home tomorrow, and Daron had nothing to show him.

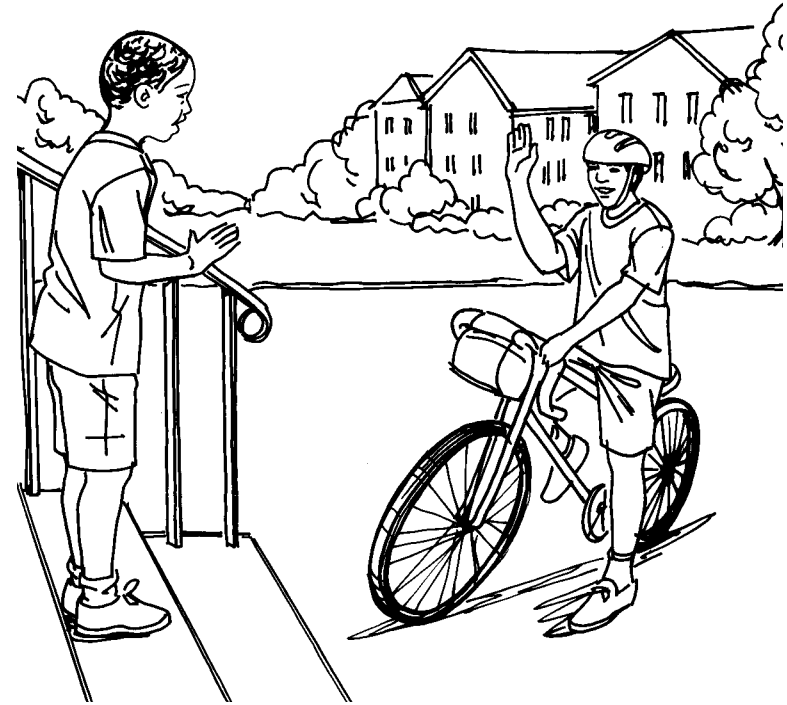
When his mom finished her **conversation** she made a quick call and then suggested they go outside for a while.

"I don't feel like it," Daron muttered.

Mom smiled and gently tugged Daron to the door. "Come on. A surprise is coming."

Daron flopped on the front steps and waited, but nothing happened. "This isn't a very good surprise, Mom," he sighed. "Can I go back inside?"

His mom laughed, "You'll miss the fun if you leave now, look."



An older boy riding a bike came toward them. "Are you Daron?" he asked.

"Yes," Daron answered slowly.

The boy got off his bike, put down his kickstand and extended his hand toward Daron. "Hi, I'm Michael." Daron hesitated, and then shook his hand. "I think this belongs to you," Michael said and pulled a blue camera bag from his handlebars.

Daron's eyes opened wide, his jaw nearly fell to the front steps. "Our camera? Thanks! Where did you find it?"

"I found it in Elm Creek Park, by a park bench," Michael replied.

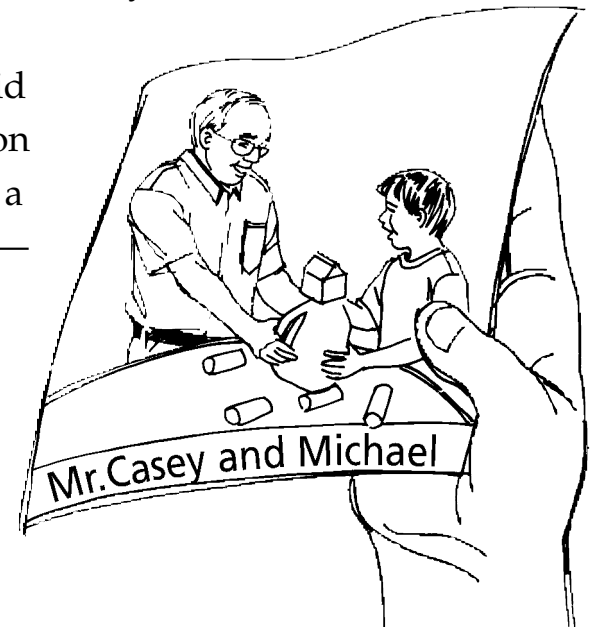
"I remember now," said Daron's mom, "we took a break from walking the dog and sat on a bench for a while. We must have forgotten to take the camera with us when we started walking again."

Daron unzipped the bag, pulled out the camera and turned it around, looking for something. "We don't have our name on this. How did you know it was ours?"



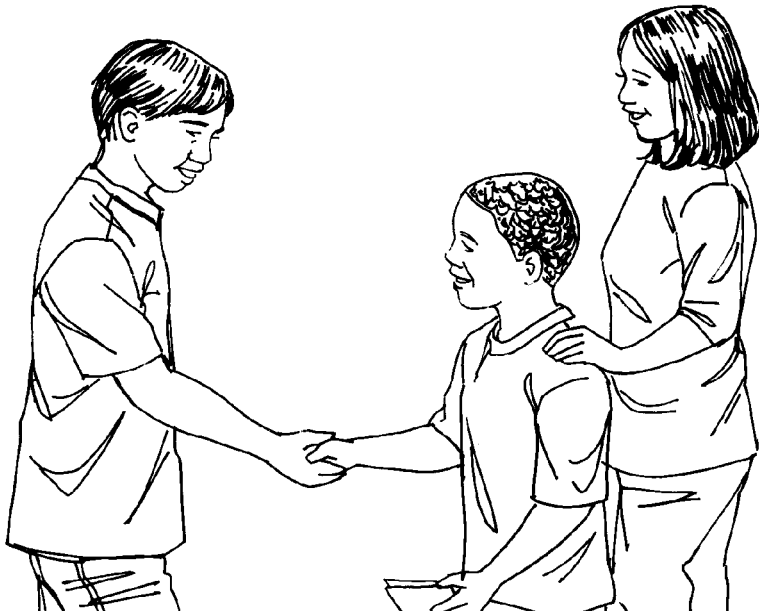
"I discovered that you and I have something in common," said Michael. Daron gave Michael a puzzled look—he couldn't imagine having anything in common with this tall boy. Michael explained, "I printed the pictures in the camera hoping one of them would give me a clue about the people who owned the camera. I saw the one showing you in your classroom with your ant sculpture. And guess what?" Daron shrugged his shoulders. "We had the same third-grade teacher. I'm in tenth grade now, but I remember doing the same project in third grade. Mr. Casey always has his students make sculptures out of recycled stuff."

"Really?" Daron asked.



"But yours was better than mine. I made a dog, but the nose was so long everyone thought it was an anteater," Michael laughed. He pulled the photographs out of his backpack and handed them to Daron. "I took the pictures to school and showed them to the secretary. She recognized you and called your mom to give her my telephone number. Then your mom called me."

"Now I can show the ant to Dad," said Daron happily. "Thanks, Michael. I guess sometimes people *can* count on the kindness of a stranger."



Glossary

admired (<i>v.</i>)	to have appreciated or warmly approved of a person or a quality (p. 5)
camera (<i>n.</i>)	a device used to record images for photographs or motion pictures (p. 4)
concentrate (<i>v.</i>)	to gather all of one's thoughts or efforts (p. 10)
conversation (<i>n.</i>)	the act of talking to someone in a relaxed way (p. 11)
photograph (<i>n.</i>)	a picture made using a camera (p. 4)
recycled (<i>v.</i>)	to have used over again (p. 4)
ruined (<i>v.</i>)	to have caused to be broken or destroyed (p. 6)
sculpture (<i>n.</i>)	three-dimensional works of art using flexible or hard materials (p. 4)

Reading a-z Running Record

Level T

Student's Name _____ Date _____

**The Ant in the
Photograph
156 words**

Have the student read out loud as you record.

Assessed by _____

page	E = errors S-C = self-correction M = meaning S = structure V = visual	E	S-C	E			S-C		
				M	S	V	M	S	V
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Accuracy Rate:

Error Rate:

Self-correction Rate:

Severe Weather

A Reading A-Z Level T Leveled Reader

Word Count: 1,801




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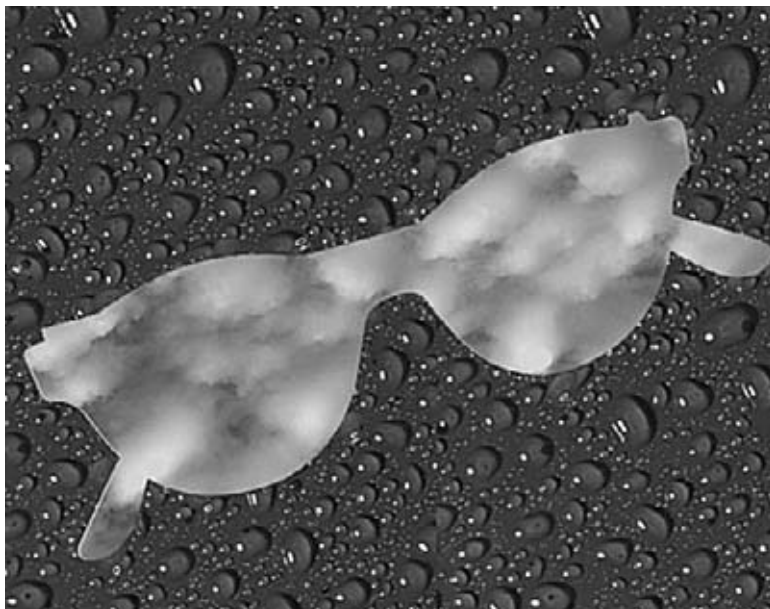
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Introduction

Weather can be calm and peaceful, or it can be fierce and violent. We experience fierce, violent weather in the form of storms. Every place on Earth can experience some type of violent storm. We will explore types of violent storms, but first let's look at the causes of weather.



Threatening storm clouds gather over a road.



Sun, air, and moisture are the building blocks of weather.

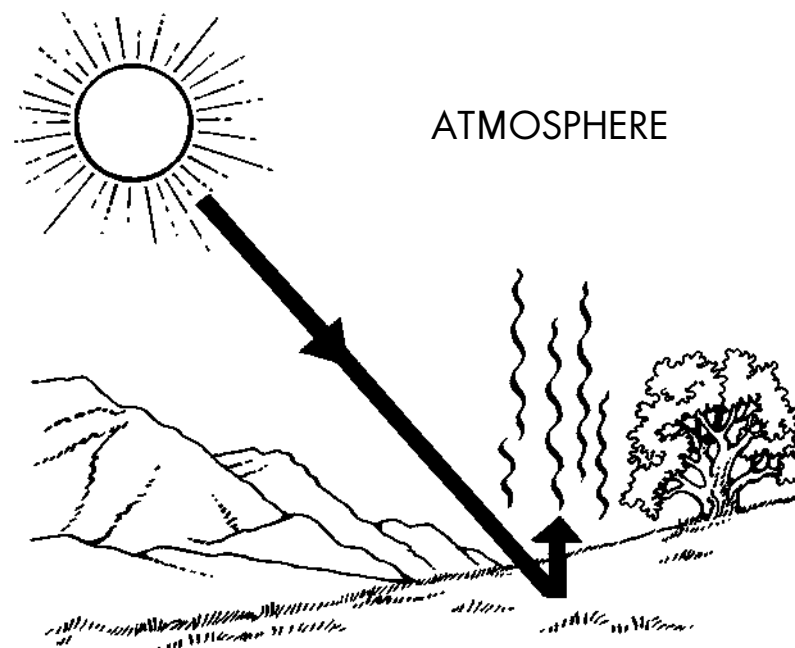
Building Blocks of Weather

When you think of good weather, you probably think of sunshine, but you might be surprised to know that the sun is responsible for bad weather, too. In fact, the sun is responsible for all weather.

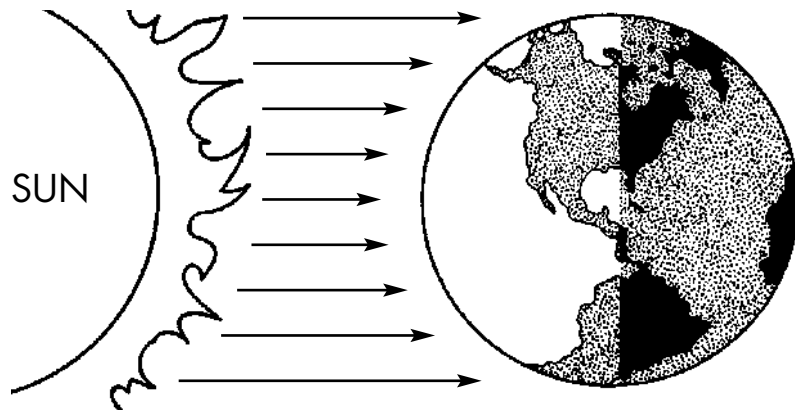
Let's talk about the things that make the weather what it is—the building blocks of weather. These are **temperature**, air pressure, wind, and moisture. Let's learn how the sun affects these things.

Temperature

Weather is caused by changes in the **atmosphere**, the air that surrounds Earth. All weather begins when energy from the sun strikes the earth. When sunlight hits the earth, it is either absorbed by the earth or reflected back into the atmosphere. The sunlight that is absorbed changes to heat. This heat comes off the earth's surface like heat from a hot stove, and it heats the air that surrounds the earth.



The earth's surface heats the air above it.



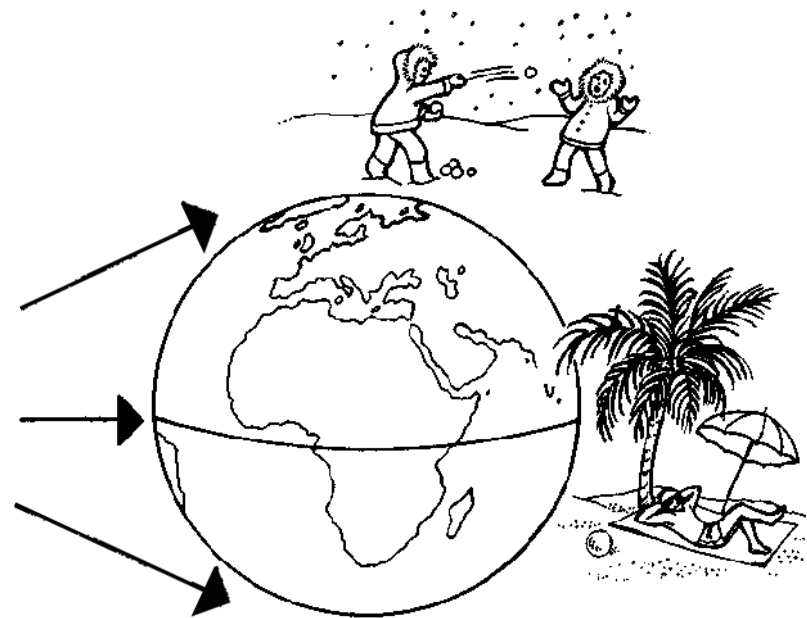
Sunlight only hits half the earth at any one time.

Now, not all of the earth is heated equally. Since the earth is a giant rotating ball, only half of it is facing the sun at any time. While the sunny side gets heated, the dark side loses heat. In addition, some places absorb more sunlight than others. For example, if sunlight strikes a dark surface, it will be absorbed more quickly, and the surface will get hotter. Also, land heats up more quickly than water.

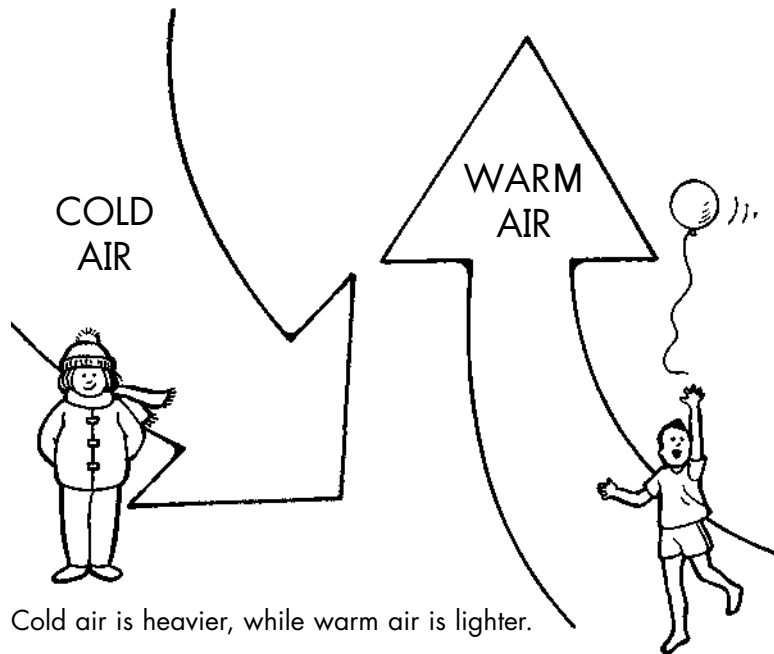
TRY THIS: Unequal Heating

Place a piece of black paper and a piece of white paper in the sun. Let them sit for a couple of hours. Feel both pieces of paper before and after. Which one gets warmer? Place a thermometer on each piece of paper to see how much warmer one is than the other.

The sun's rays also strike more directly near the equator, which means that water and land around the equator get hotter. Sunlight strikes areas around the poles at a sharp angle. Angled light does not get absorbed as much as direct light, which explains why the poles are colder. Also, the poles are covered with snow and ice, and these light-colored surfaces do not absorb sunlight as well.



The angle of sunlight creates cold poles and a warm equator.



Air Pressure

The air in the atmosphere has weight, and it is being pulled toward the earth by gravity. Because it is pulled down, it pushes against things. This is what we call **air pressure**. We know that cold air is heavier than warm air, and because of this, it pushes down with more pressure. This air is called high-pressure air. Scientists have learned that high-pressure air always moves toward warmer, low-pressure air. The colder air being pulled toward the earth pushes the warmer air up.



Wind can be gentle or violent.

Wind

Wind is caused by the unequal heating of the earth. The unequal heating causes some air to be warmer than other air, which leads to a difference in air pressure. The unequal heating and the differences in air pressure set air in motion, creating wind. The greater the difference in temperature and pressure between two large masses of air, the stronger the wind along the borders of these air masses.

Moisture

The sun also heats water in lakes, rivers, and, most importantly, oceans. The sun's energy causes water to evaporate and form **water vapor**, which is an invisible gas. Water vapor in the air has a lot to do with the weather we experience.

TRY THIS: Make Your Own Cloud

When you are outside on a cold winter day, you can usually see your breath. This happens in the same way that clouds are formed. The air of your breath is warm and moist. When you breathe out, the warm, moist air rises and meets the cold outside air. The water vapor in your breath changes to tiny drops of water and turns into a little cloud.



Do You Know?

It takes about a million cloud droplets to form an average raindrop.

Type of precipitation	Temperature in the cloud
Rain	Above or below freezing
Snow	Below freezing
Sleet and freezing rain	Above freezing
Hail	Above freezing in the lower cloud and below freezing in the upper part of the cloud. Also, high winds blowing upward in the cloud.

Warm air can hold more moisture than cold air, and cold air constantly pushes this warm, moist air upward. As this warm air rises, it cools down, and the water vapor begins to get squeezed out. When this happens, the water vapor changes to tiny water droplets that form clouds. The water droplets continue to cool and join together in clouds. In time, they get so big that they are pulled to the earth by gravity. **Precipitation** is the name we give to this water falling to the earth.

Temperature between the clouds and ground
Above freezing
Below freezing
Below freezing. May start as ice, then melts, then freezes again as it passes through freezing air near the ground.
Above freezing

Precipitation can be in the form of rain, snow, or ice. The kind of precipitation that falls depends on the temperature in the clouds and the temperature between the clouds and the ground. This table shows the conditions needed for different kinds of precipitation.

Now that we've learned about the building blocks of weather, let's learn what happens when conditions are extreme. Remember, violent storms happen when temperature, air pressure, wind, and moisture are extreme.

Do You Know?

There are approximately 40,000 thunderstorms in the world every day. Every day someone is struck by lightning.

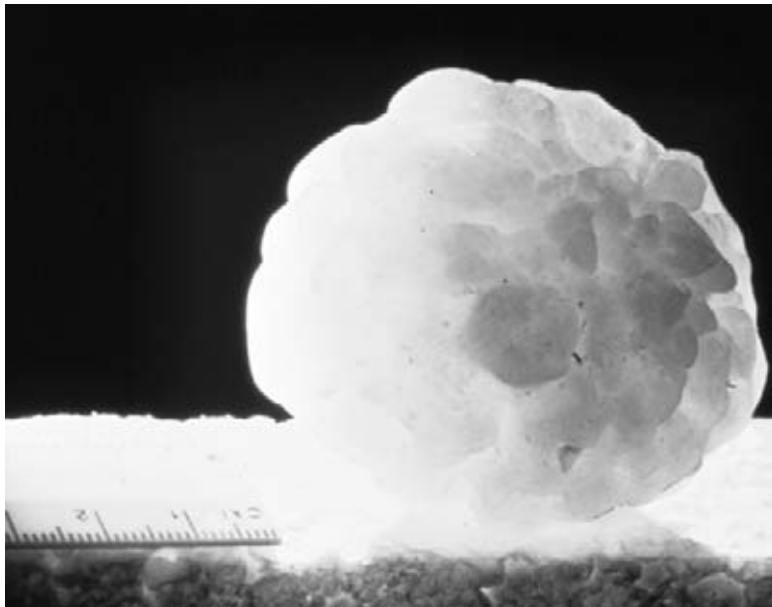


Thunderclouds over the prairie

Thunderstorms

Thunderstorms are the most common type of storm. They usually occur during hot, humid weather, and they form when warm, moist air rises quickly. Tall clouds form, and large amounts of water vapor in these clouds form water drops very quickly.

Strong wind in a thunderstorm can blow large water drops far up in the cloud, where they freeze. Then they begin to fall and collect more moisture. The wind can blow the ice pellets back up into the cloud, where another layer of ice forms on the pellets. Sometimes this happens many times to the same ice pellets. Each time, they get bigger until they become too heavy for the wind to blow them back up. Then they fall as **hail**. Hailstones the size of baseballs and grapefruits have been reported.



The ruler (bottom left) shows the size of this hailstone.

Thunderstorms get their name from the lightning and thunder they produce. Lightning can go from one cloud to another cloud, or it can go from cloud to ground or from ground to cloud.

Lightning, which is very hot, heats the air to cause thunder. The hot air expands very quickly, which creates a shockwave. When the wave reaches your ear, you hear it as thunder.



Lightning usually strikes the tallest object around.



Do You Know?

A bolt of lightning is hotter than the surface of the sun.

You can tell how far away lightning is by counting the number of seconds between the time you see lightning and the time you hear thunder. If you count five seconds, the lightning is 1.6 kilometers (1 mi.) away from you. If you count ten seconds, it is 3.2 kilometers (2 mi.) away.

Tornadoes

Tornadoes, which are the strongest winds on Earth, have wind speeds that may reach 322 to 480 kilometers per hour (200–300 mph). Tornadoes rarely last more than one-half hour, but they can do great damage. They can flatten buildings, pick up cars and trucks, and tear out trees by the roots.

Tornadoes form when warm air rises very quickly. Cold air rushes in to replace the rising warm air. It moves in so fast that it begins to rotate or spin, and this spinning causes a funnel cloud to form.

Do You Know?

On average, the United States experiences 100,000 thunderstorms each year, causing about 1,000 tornadoes.



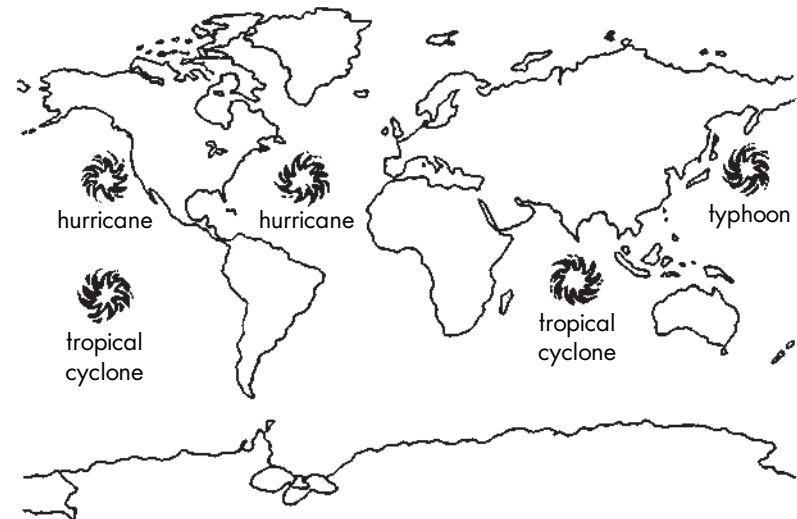


Waterspouts are often beautiful.

When a tornado occurs over water, it is called a **waterspout**. Whirlwinds, sometimes called **dust devils**, form when hot air spins up from the ground over bare soil and deserts. These are different from tornadoes and waterspouts, which spin down from clouds.

Hurricanes, Typhoons, and Tropical Cyclones

During the warm months of the year, great masses of warm, moist air form over warmer parts of the ocean. They begin to swirl around when cooler air moves in to replace the rising warm air. When this happens, huge storms form. These storms have different names, depending on where in the world they occur. Look at the world map to see what these storms are called in different parts of the world.



Tropical ocean storms have different names in different parts of the world.



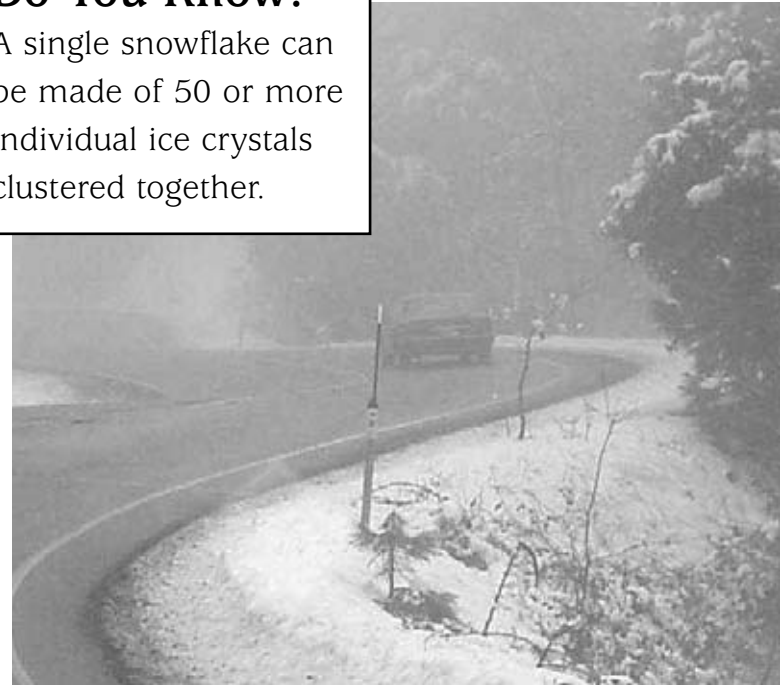
Hurricanes cost millions in damage.

These huge storms can be hundreds of miles across. They have three parts. In the center is the eye of the storm, where the air is calm. The eye is surrounded by a wall of swirling clouds containing strong, violent winds. These winds whirling around the center can reach over 322 kilometers per hour (200 mph). The third part is the rain bands, which are bands of thunderclouds that reach out from the wall and produce heavy rain.

The damage from these storms is done by wind and flooding. When these large storms reach land, they push large mounds of water ahead of them. When these mounds of water hit land, boats and buildings may be swept away and destroyed. The heavy amount of rain can also cause serious flooding.

Do You Know?

A single snowflake can be made of 50 or more individual ice crystals clustered together.



Blizzards make driving very dangerous.

Blizzards

The most fierce winter storm is called a **blizzard**. This is a storm that has heavy snowfall and high winds of over 56 kilometers per hour (35 mph). Sometimes visibility is so limited that the blizzard is called a **whiteout**. Blizzards can dump several feet of snow quickly. This snow blows around and piles up into huge drifts of up to 15.2 meters (50 ft.).

These fierce storms can collapse buildings, bury cars and trucks, and knock out electrical power. In the mountains, heavy snowfall can lead to **avalanches**. Avalanches are huge walls of snow that break loose and tumble down a mountainside. They have been known to bury entire villages.



An avalanche buried this car.

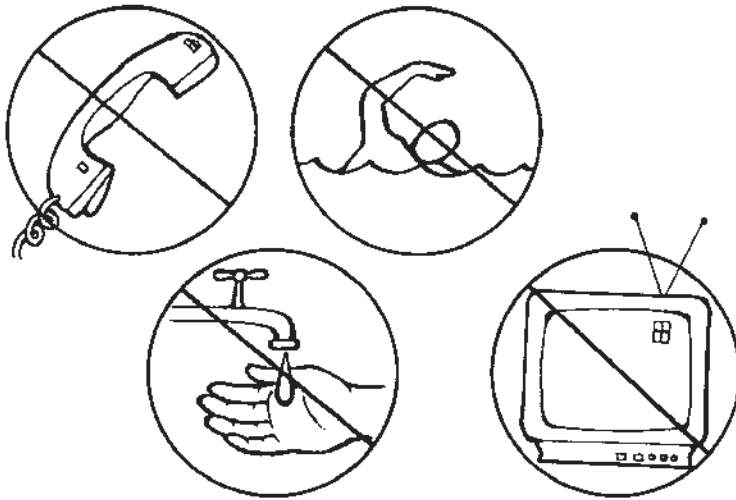
Storm Safety

It pays to know what to do when a storm is coming. It can save your life. Here are some safety tips.

Thunderstorm Safety

- Look for shelter, such as a building or car.
No matter what, do not take shelter under trees, because trees attract lightning.
- If you are in the open, never lie down on the ground during a storm, because after lightning strikes, it usually spreads out on the ground. The safest position is to put your feet close together and crouch down with your head as low as possible, curled up in a tight squat.





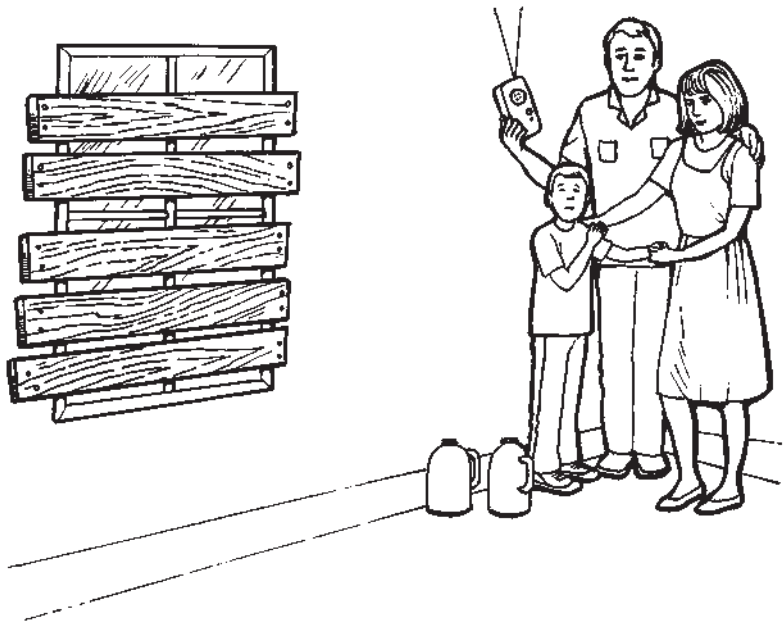
- Do not stand on a hilltop or open field.
- If you are in or on the water, get out or get off.
- Do not carry anything made of metal.
- Do not use the telephone. If lightning strikes the phone line, the strike can travel to you if you are holding the phone. If you must call someone, use a cordless phone or a cell phone.
- Do not use electrical appliances. Lightning could follow the wire.
- Stay away from plumbing pipes (sink, bathtub, or shower). Lightning can cause an electrical charge in the metal pipes.

Tornado Safety

- The key word in tornado safety is **DOWN**. Go to a basement, if you can. If you are in a building without a basement, go to a closet or bathroom. In either case, get under a heavy piece of furniture or inside the bathtub, and protect your head and neck with your arms.



- Mobile homes usually collapse or get blown off their foundations during a tornado. If you are inside one, get outside, preferably to a basement. Otherwise, lie down in a ditch or depression in the ground, and protect your head and neck with your arms.
- Don't get in a car or other vehicle; vehicles have been blown over a mile away by tornadoes.
- Stay away from doors and windows.



Hurricane Safety

- Before a hurricane comes, board up windows. Pick up loose things in the yard. Get a battery-powered radio and store some water.
- If a hurricane is moving into your area, go to higher ground far inland.
- If you cannot leave the area, get inside a concrete building on the highest ground available.
- Stay away from doors and windows.
- Do not go outside.

Glossary

air pressure	the force of the air in the atmosphere when pulled to Earth by gravity (p. 9)
atmosphere	the air surrounding Earth up to a height of about 1,000 kilometers (621 mi.) (p. 6)
avalanche	a wall of snow that slides swiftly down a mountain (p. 23)
blizzard	a severe snowstorm with cold temperatures and heavy snow drifts (p. 22)
dust devil	a current of air whirling upward from the ground in a spiral motion (p. 19)
hail	round pieces of ice that sometimes fall during thunderstorms (p. 15)
precipitation	moisture that falls to Earth. Precipitation can occur in many forms (rain, snow, hail, sleet, etc.) (p. 12)
temperature	the degree of hotness or coldness of anything, usually as measured on a thermometer (p. 5)
water vapor	water in the form of gas (p. 11)
waterspout	a whirling, funnel-shaped or tubelike column of air occurring over water, usually in tropical areas (p. 19)
whiteout	a condition that occurs during a severe blizzard when visibility is very limited and everything looks white (p. 22)

Name _____

INSTRUCTIONS: Complete the cause and effect equations.

Unequal heating	+		=	wind
--------------------	---	--	---	------

Water droplets	+	the pull of gravity	=	
-------------------	---	------------------------	---	--

	+		=	hailstones
--	---	--	---	------------

Warm air rises very quickly	+	cold air pushes in to replace the rising warm air	=	
-----------------------------------	---	---	---	--

	+		=	hurricane typhoon tropical cyclone
--	---	--	---	--

Name _____

INSTRUCTIONS: Insert commas to punctuate the following sentences.

1. Weather can be calm peaceful fierce or violent.
2. In addition some planets are smaller than others.
3. Also some places absorb more heat than others.
4. The sun heats water in rivers lakes and most importantly oceans.
5. For example tornados are fierce storms.
6. Storms cause damage to houses cars crops and other buildings.
7. Now not all the planets are the same size.

Drums and Drumming

A Reading A-Z Level T Leveled Reader

Word Count: 1,646

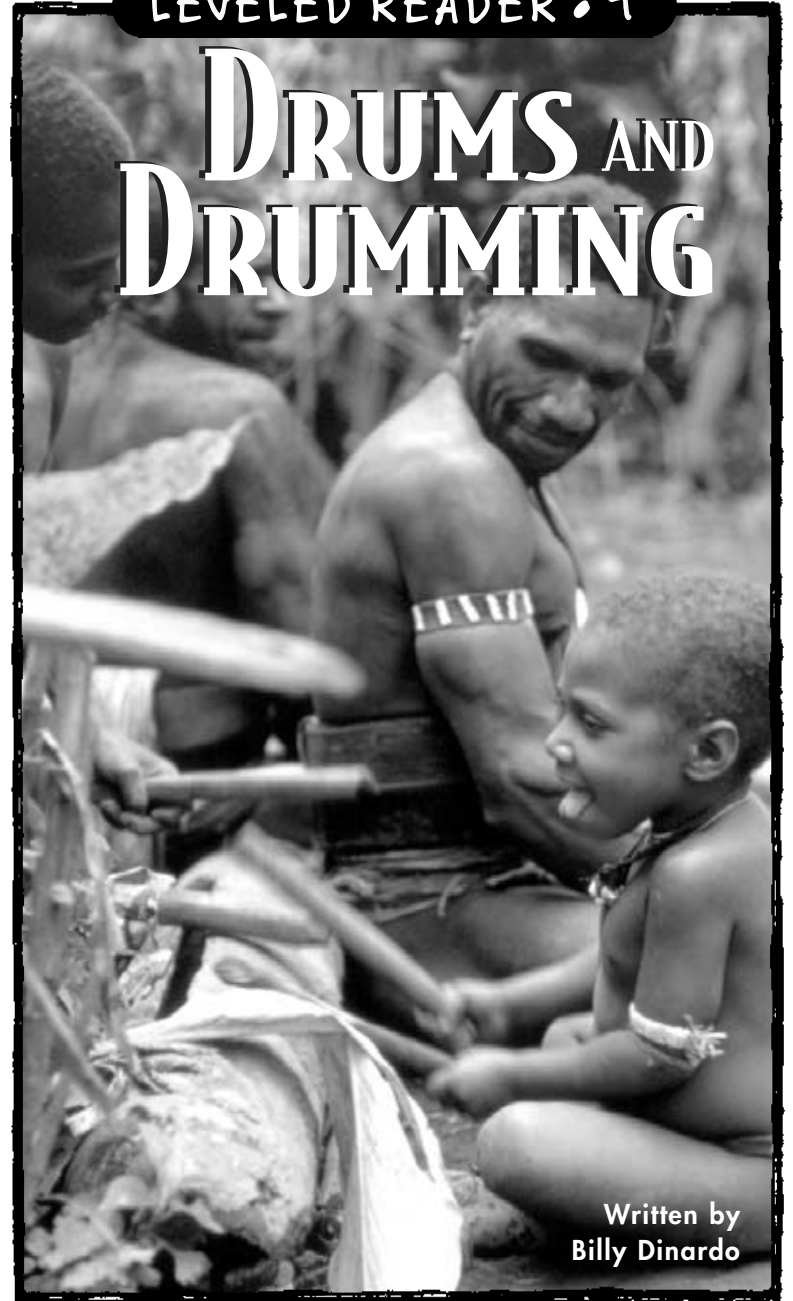


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DRUMS AND DRUMMING



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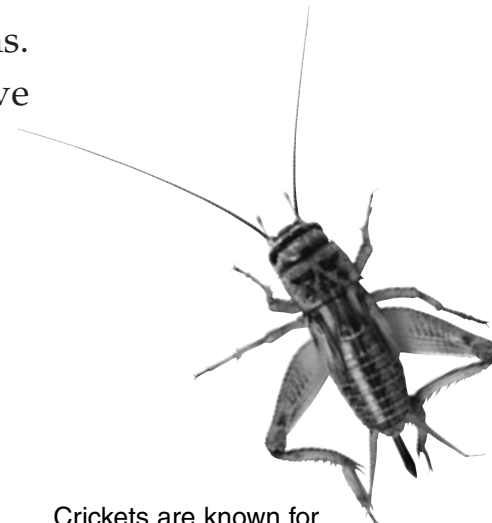
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Introduction

Stop and listen. Is the wind causing a twig to tap against the window? Is rain dripping from the eaves of the roof to a puddle on the ground? Are you near the beach, and if so, can you hear the waves breaking on the shore? You are experiencing rhythm, a repeated pattern of pulses. Feel the pulse at your wrist. That life-giving rhythm comes from the beating of your heart.

Many animals make rhythmic sounds to attract mates or defend territory. Since ancient times, people have created rhythmic sounds with drums.

Drums have been used for many reasons besides making music.



Crickets are known for their rhythmic chirping.



A young girl enjoys listening to drumming.

A Drum Is . . .

People all over the world have made and used drums. Drums are percussion instruments, instruments that must be hit in order to create rhythmic sounds and patterns. But what exactly is a drum?

Cylinder-shaped Drums

Some drums are shaped like cylinders and have a head at each end. Drummers hit the top head with their bare hands or with drumsticks. The bottom head helps the sound bounce around inside the drum.

Imagine you are a drum maker from long ago. You would cut a piece of a tree trunk and hollow it out.



Ceremonial Native American drums

Your drumhead would be made of animal skin, and you would use nails or leather straps to attach the head to the drum.

Drums in modern drum sets are made of cylinders. And drumheads are still attached to the top and bottom of the cylinders. But modern drumheads are made out of plastic, and metal parts attach the heads to the drums.

Kettle-shaped Drums

Some drums are shaped like bowls or kettles. Early kettledrums were made of a clay or wooden bowl, which could be small or very large. A single drumhead would be stretched over the opening.



Modern kettledrum

Many centuries ago, soldiers used kettledrums made of brass to frighten their enemies. These kettledrums were huge and so heavy that they had to be carried by horses or elephants. An enemy could become confused and be thrown off balance by the pounding of the drums. The sight and sound of elephants and drums could cause panic in the hearts of the enemy.



A timpani player, 1932

By the 1600s, this type of drum was being used in symphony orchestras as a musical instrument. Kettledrums, or timpani, are still used in modern symphony orchestras. They are usually made out of brass or copper.



Male drummer-dancers in Papua New Guinea, 1999

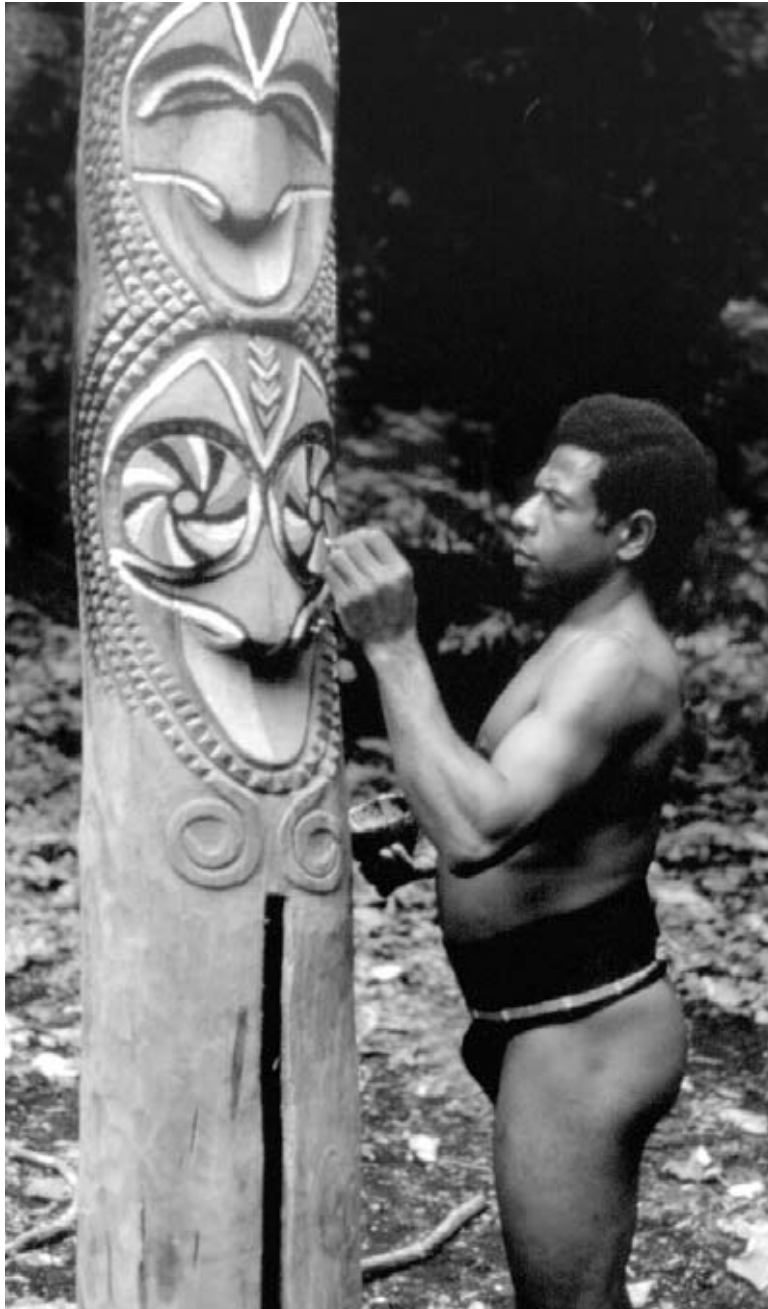
How Drums Are Used

Over the years, drums have had many uses. In wars long ago, drums were used to frighten enemies. But drums have also been used to communicate with friends. Some people even believe that drums have the power to heal.

Communication

Imagine your tribe needs to send an urgent message to other members of your tribe. Now imagine that the other members are miles away and that a lake or a steep cliff separates you from them. It would take a messenger hours to deliver the message by foot, and there is no such thing as telephones or e-mail where you live. How could you send your message in a matter of minutes? The answer is, simply, with drums.

For centuries, Native Americans, Africans, and other tribal peoples have sent messages using drums. Natives living on islands in the South Pacific used tree drums to send messages. Tree drums were hollowed-out logs that were placed on their ends. Some of these tree drums were 20 feet tall. A slit about four inches wide was cut down one side of the tree drum. The sound made by the tree drum depended on the length of the slit. People often carved faces, animals, and different shapes in the tree drums.



Painting a tree drum on a South Pacific island



African log drum

Tree drums of different sizes were grouped together to produce a variety of sounds. A single tree drum could make different sounds depending upon where the drummer hit it. People of a tribe could send and receive messages using a pattern of drumbeats.

Drums have also been used to communicate during times of war. Imagine you are an officer who needs to give orders to soldiers during a battle. The thunderous noise of guns and cannons would be so loud that your soldiers couldn't hear your voice. You could use drums to communicate with your soldiers. Soldiers learned to recognize drum beats as commands to attack, retreat, and regroup.

The drum beats used by one army had to be different from the drum beats used by the other army.



A Civil War drummer



Native American gathering, 1889, Northwest Territories, Canada

Healing Power of Drums

Ancient tribes knew of the healing power of drums. A hunter might return home very tired after an unsuccessful hunt. While he slept, someone may have softly played a drum over him to scare away the bad memories. Somehow, the soothing rhythms helped the hunter to heal.

Native Americans speak of the spirit power of drums. The sound of drums brought courage to warriors who were about to go into battle. Dancing to drum beats gave a sense of group strength to Native American tribes.

Today, people are learning about the healing power of drums, and many people are joining drum groups. An experienced drummer teaches drum patterns to members of the group. People feel satisfied and happy when they get a pleasing sound from their drum. Playing drums together as a group can be very healing. Group members forget the concerns of everyday life as they play drums together and are able to experience the “medicine” of drums.



A modern drum circle

The World of Drums

Drums of Africa

The *djembe* (JIM-bay) is a hand drum used by people throughout the continent of Africa. This drum is formed from a hollowed-out log. It is shaped like a drinking goblet—wide at the top and narrow at the bottom. The djembe has a single drumhead and is usually carried

using a shoulder

strap. People

of different

African tribes

have used the

djembe before

battles to give

courage to

warriors. The

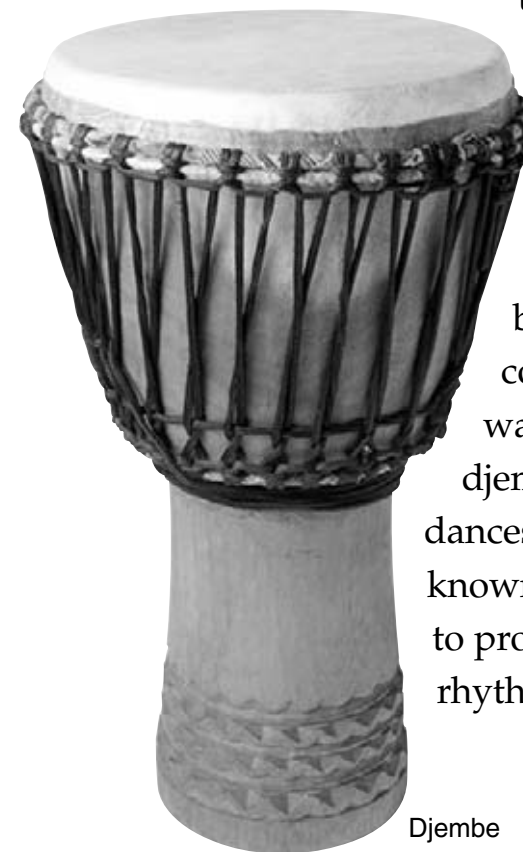
djembe is used for

dances and is also

known for its power

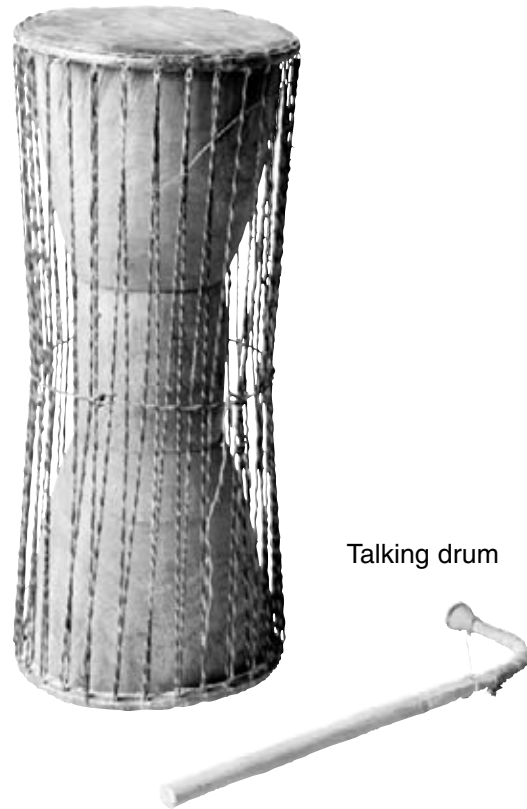
to produce healing

rhythms.



Djembe

The *talking drum*, another kind of African drum, is shaped like an hourglass—wide at the top and bottom, and narrow in the middle. Talking drums have a head at the top and bottom. Talking drums were first used to communicate between villages. Players held the drum under their arm and squeezed it against their body as they played. This caused the drum to make different sounds, or “talk.” Talking drums are hit with a curved drumstick.



Talking drum

Drums of Latin America

One of the most popular Latin American drums came from Africa. This drum is known as the *conga drum*, or *conga*. A conga drum is shaped like a cylinder that is thinner at the bottom. It has a single drumhead that the drummer hits with his or her hands. A person can sit or stand to play the conga. When sitting, the player holds the conga between his or her knees. The drum rests on a stand when the drummer wants to play standing up. Conga drums come in three sizes that make high, medium, and low sounds.



Conga drums



A bongo player

Bongo drums, or bongos, are also used in Latin American music. Bongo drums are shaped like the conga drum, but they are much smaller than congas. Two drums of different sizes are connected to form a pair of bongo drums. Bongos are held between the knees and are played sitting down. The single drumhead can be hit with the hands or fingers.



Do You Know?

The biggest drum: Some Taiko drums are taller than a grown man.

The smallest drum: Your eardrum!
This membrane receives and transmits sound waves in the ear.

Japanese Taiko Drums

Long ago, *Taiko drums* were played on battlefields. Today, groups of Taiko drummers entertain people all over the world. Taiko drums are usually carved from a single log. Some of these drums are gigantic. A Taiko drum can be bigger than the person who is playing it. Taiko drummers have to train hard to become members of these drum groups.

The Modern Drum Set

The modern drum set is made up of drums, pedals, stands, and cymbals. But drum sets have not always looked and sounded as they do today. The modern drum set came about as jazz music developed in the United States.

Jazz music began in the American South toward the end of the 1800s. Jazz is a blend of many kinds of rhythms and music. Work songs of African American slaves, religious songs, and West African rhythms blended together into what we now call jazz.



By the 1920s, jazz music had become very popular.

African American brass bands marched down the street playing music similar to jazz. Many drummers marched together in these bands. Each drummer played an individual drum. In the early 1900s, new inventions allowed one drummer to play many drums at the same time. These inventions led to the birth of the drum set.



The tradition of marching bands in New Orleans continues to this day.



Bass Drum Pedal

In 1909, William F. Ludwig invented the first bass drum pedal that was simple and easy to use. This allowed drummers to play the bass drum with one foot. They could then play the other drums and cymbals with their hands. Today's bass drum pedals are easy to play and adjust.



Hi-hat

The hi-hat is a set of cymbals found in a modern drum set. At first, the hi-hat was just a pair of hinged boards with cymbals attached to each board. Drummers tapped the top board with one foot to make the pair of cymbals strike each other. Today's hi-hat is made of a foot pedal and a stand that holds a pair of cymbals. Drummers can make the cymbals strike each other by using the foot pedal. They can also hit the hi-hat with a drumstick.

Drum Shell

Today, drum shells are usually made of layers of maple or birch. Thin layers are glued together in circular presses to make cylinders. Then heat and pressure are used to form the layers into drum shells.



Drum shells being made at Drum Workshop in Oxnard, California

Conclusion

Drummers and inventors have helped to create the modern drum set. But a drum set is only as good as the drummer who plays it. A good drummer is not always the fastest drummer. And a good drummer is not always the drummer who plays the most difficult beats. A good drummer sets the beat and rhythm for the other musicians to play to. To make music with a band, a drummer has to be a team player.



The author playing with the Troy Olsen Band

Some Drummers to Check Out



Art Blakey (1919–1990)

American jazz
drummer and
bandleader



Cindy Blackman
contemporary
American jazz
and rock drummer



Ringo Starr

British rock star
and drummer
for the Beatles

Web Sites to Check Out

www.thedrumclub.com

www.moderndrummer.com

A Note from the Author

My grandfather was a drummer, and he got me started playing drums. Being in a band is like being on a team, where everyone works together in order for the team to succeed. I've been working in bands since I was ten years old, and I still love playing drums.



The author's grandfather playing drums at the Hollywood Canteen

Reading a-z

A black and white photograph of a mridangam, a traditional Indian drum, and a mridangam stick (mridangam chutti). The drum is positioned vertically, showing its characteristic hourglass shape and textured surface. The stick lies horizontally to the right of the drum.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Name _____

INSTRUCTIONS: Choose three words from the word box and write two different sentences to show two different meanings.

even	quarter	star	drums
cycle	feet	type	

Example: system

There are nine planets in our solar system.

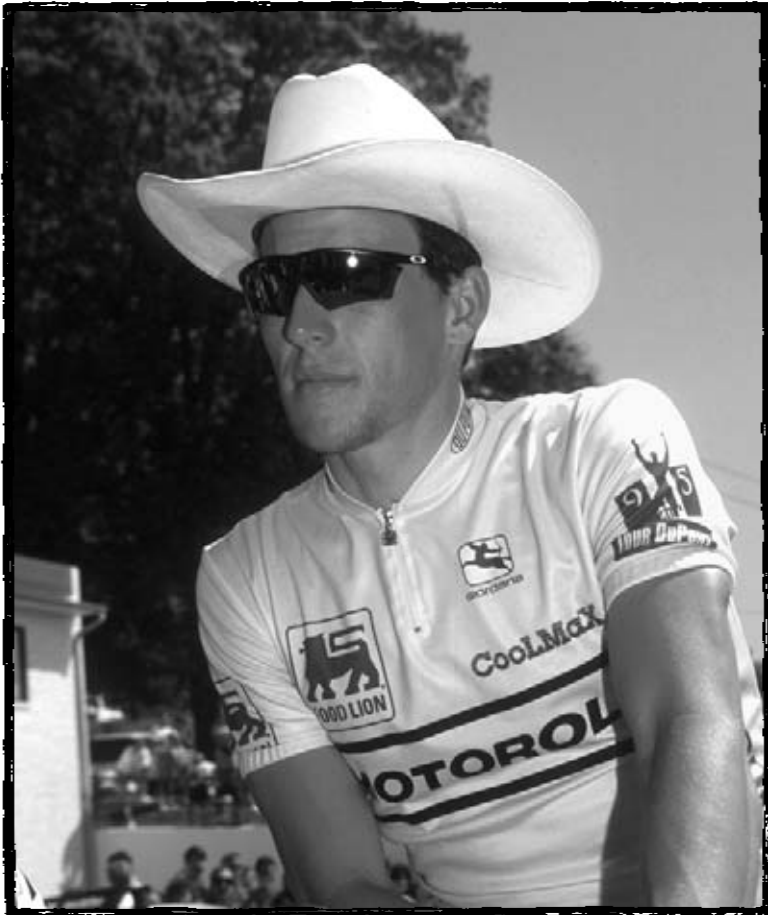
What kind of operating system does your computer use?

My sentences:

Lance Armstrong

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knowledge and assistance in writing this book.

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Lance Armstrong celebrates his seventh Tour de France victory with his children: Luke, Grace, and Isabelle.

Introduction

Lance Armstrong is perhaps the greatest cyclist of all time. He is one of the most celebrated and recognized athletes in the world. He is a hero for his amazing successes in the sport of cycling, including winning the Tour de France seven times! But this is not the reason why his name has become a household word. He is known outside the world of cycling for being a gritty, courageous young man who made an amazing comeback from the edge of death. He was given less than a 50 percent chance of surviving advanced cancer. Yet, he fought his way back to good health using the same grit and courage that had served him so well in his cycling career. This is his story.

Early Life

Born in Plano, Texas, in 1971, Lance was raised by his mother, Linda. His ability as an athlete was apparent from an early age. At 13, Lance won the Iron Kids Triathlon, and he became a professional athlete at 16. Eventually, he lost interest in the swimming and running components of the sport as he became more focused on cycling. By his last year of high school, cycling had become Lance's passion. It was becoming clear that it would be his future.

During Lance's senior year in high school, he qualified to train with the U.S. Olympic team hopefuls in Colorado Springs, Colorado. The difficult training schedule nearly kept him from graduating from high school. But thanks to private tutoring during the final weeks of the school year, he graduated with his class.

Getting Serious about Racing

After graduation, Lance was finally able to devote himself to full-time cycling. In 1989, he qualified for the Junior World Championships in Moscow. He competed as an amateur for several years. During that time, he developed

his skills as a cyclist and also began to experience life beyond the small-town world in which he had grown up. Only two years after devoting himself to cycling full-time, he was the U.S. National Amateur Champion. He continued in amateur competition through the 1992 Olympic games in Barcelona, Spain.



Lance
on Team
Subaru
in 1991



CHAMPIONS challenge of CHAMPIONS



Lance wins
the Challenge
of Champions,
a triathlon
held in
Monterey,
California,
in 1991.

Lance became a professional cyclist in 1992. His first race was in Spain. It was a rude awakening after his many, seemingly effortless successes in amateur competition. He finished the race in last place, 27 minutes behind the winner. Another cyclist might have been discouraged enough to quit racing, but not Lance. The experience fueled his determination to overcome anything that got in the way of his success.

Lance with race leader Stephen Swart before starting the 1992 Fitchburg Longsjo stage race in Massachusetts, which Lance won.



Lance wins his first stage in the Tour du Pont in 1993.

Success at Last

The following year of his cycling career, Lance's determination bore fruit. He won 10 titles in 1993, including U.S. Pro Champion, World Champion, and a stage victory in the Tour de France. He rode for Team Motorola, an American team that was ranked among the top five teams in the world.

Over the next two years, Lance's successes continued. He won the 1995 Tour du Pont and won a significant stage at the 1995 Tour de France. He also won the Spanish race that had been such a challenge for him when he first had begun to race professionally.

In 1996, his successes continued. He again won the Tour du Pont and won other important races. He seemed to be on top of the world.

Lance competes in an individual time trial in the 1996 Tour du Pont, a stage race held in the eastern United States.



Illness Strikes

Then, in October 1996, severe pain forced Lance to quit riding. Medical tests revealed that he had advanced cancer. It had spread to several places in his body, including his lungs and brain. Lance says that he knew something was wrong with his health three years before he was told he had cancer. Asked why he waited so long to seek treatment, he admitted to being hardheaded. His determination to push himself as an athlete, along with a difficult training regimen, had caused him to ignore the pain and keep going. Looking back, he realized that he had ignored many of the warning signs. Perhaps the cancer could have been caught before it had spread. Now he could no longer ignore it.



Lance at the 1996 Olympics in Atlanta, the summer before he was diagnosed with cancer

Doctors gave Lance only a 50/50 chance or less of surviving. One doctor assessed his chances at only 20 percent. Lance was very frightened, and he was in severe pain. But he still had the fierce determination that had served him so well in his cycling career. He was committed to staying positive and to not giving in to his fears. With the support of his mother and close friends, he searched for the best medical team he could find. He found doctors who not only believed he could recover from the cancer, but who also believed that he might race again. He underwent three surgeries soon after learning he had cancer. Then he began chemotherapy.

During this time, Lance was flooded with the support and love of family and close friends. This helped lift his spirits, even though he was weak and very ill from chemotherapy. Miraculously, the chemotherapy began to work, and Lance began to recover from cancer. As he did, his hopes of racing bicycles returned. He began to train again on his bicycle only five months after learning he had cancer.

During the hardest months of his illness, Lance had a lot of time to think about his life. Before the cancer, life seemed simple for him—it was about competing and winning. After discovering that he had cancer, he learned that things he had taken for granted could be taken away, especially his health. He learned to be grateful for his health and for the support of loved ones. He learned to value more than just cycling. Not only was he a competitive athlete, he was also a man who was grateful for the blessings in his life.

Giving to Others

Lance's gratitude prompted him to form the Lance Armstrong Foundation (www.laf.org) to benefit cancer research and to support cancer patients. From the beginning of Lance's experience with cancer, it became important to him to help others. The foundation provides information, services, and support to cancer patients. In addition, it encourages cancer patients to have a positive attitude and to think of themselves as survivors, not victims. The foundation works to reduce the fear associated with cancer and to build hope in patients and their families.



1998 Ride for the Roses

Return to Racing

Lance recovered from cancer. He returned to professional cycling in May, 1998. His first cycling victory was a race that was part of the Ride for the Roses, a weekend benefit for the Lance Armstrong Foundation. Before that win, Lance nearly quit cycling. He wasn't ready, and a race in bad weather in France made him rethink his choice.

Lance's return to professional cycling was not a smooth road. When he learned he had cancer, he had been on a French racing team. The team had doubts that he could recover the strength and success he once had. They took him off the team when they learned about his illness. Lance was disappointed. But after only a few months, he joined the United States Postal Service Pro Cycling Team. The team's faith in his ability to make a comeback boosted his determination.

Lance soon returned to his winning ways. In 1999, less than three years after fighting off cancer, he won the world's most prestigious bike race — the Tour de France. He went on to win the Tour de France for the next six years.



No one had ever won the Tour de France seven times, let alone in seven straight years. His seven victories made him one of the world's all-time greatest athletes.

Lance joined the United States Postal Service Pro Cycling Team in 1998.

How Lance Does It

The Tour de France, according to some people, is the greatest endurance event of all time. And some say that Lance Armstrong is the greatest endurance athlete of all time. So what makes Lance so much better than anyone else?

His mother says he doesn't excel by "sitting on the couch eating potato chips." Lance trains very hard. Eight months before the Tour de France, Lance increases his training routine by pedaling up and down roadsides for more than eight hours a day.



Lance on the victory stand for the 2004 Tour de France.



The Tour de France finishes in Paris.

But, for Lance, his ability to excel is about more than hard work. Despite having had cancer, Lance has an extraordinary body. His heart is larger than the hearts of most people. The average heart pumps about five gallons (20 liters) of blood per minute. Lance's heart pumps up to nine gallons (34 liters). His lung capacity is twice that of the average person, meaning that he can send twice the amount of oxygen to his body's cells than you or I can. He also has more red blood cells than the average person. Red blood cells carry oxygen to other cells in the body. These cells use oxygen to burn food and make energy. Lance's muscles are also special. They do not tire as fast as the average person's muscles. He can exercise longer and recover more quickly than most athletes.

Training, an extraordinary body, and a competitive spirit filled with determination make Lance a very special athlete. Lance has proved that he is not a quitter. When it comes to overcoming the odds, Lance is the best. After all, who would have thought that one man could win seven straight Tour de France victories?



Lance competes in an individual time trial wearing the Tour de France race leader's yellow jersey.

Tour de France Terms

- breakaway** A rider or group of riders that speeds up to escape the peloton and gain time in a race
- peloton** The main pack, or group, of riders
- stage race** Usually a multiple-day race where there is a race each day. The times from each stage are added together to make up the overall time.
- time trial** A stage where, one at a time, an individual rider or team races against the clock



A small part of a Tour de France peloton of over 180 riders races through the French countryside.



The top three finishers in the 2001 Tour de France share the podium: 2nd place Jan Ullrich (Germany); 1st place Lance Armstrong (United States); and 3rd place Joseba Beloki (Spain).

Tour de France Facts

- The Tour de France started in 1903. It was the first of the big European tours (stage races).
- It has been held every year since 1903 except during World War I and II.
- Over 95 percent of the race takes place in France. Over the years, the route has included many neighboring countries. The race always finishes in Paris.
- The terrain of the race varies from hot flatlands in France's interior to some of Europe's highest mountain passes. The weather ranges from

summer heat that melts the tar on the roads to the chilling winds and constant snow.

- The Tour de France is a 20-plus stage race ridden over approximately three weeks. Average daily rides are 150 to 180 km (90 to 108 miles).
- The Tour de France originally started as an amateur event for individual riders. Then it turned into teams of riders from different nations. Now each team has riders from many countries. In recent years, about 20 teams of 10 riders each have competed every year.
- Bicycle racing is a team sport with team strategy. Each team has a team leader who is the strongest rider. Other specialty riders (such as climbers and sprinters) are responsible for helping the team and protecting the team leader's standing.



The U.S. Postal Service Team competing in a team time trial

Winners of Three or More Tours de France

- Philippe Thijs, Belgium ('13, '14, '20)
- Louison Bobet, France ('53, '54, '55)
- Jacques Anquetil, France ('57, '61, '62, '63, '64)
- Eddy Merckx, Belgium ('69, '70, '71, '72, '74)
- Bernard Hinault, France ('78, '79, '81, '82, '85)
- Greg Lemond, United States ('86, '89, '90)
Lemond is the only American other than
Lance Armstrong ever to win the Tour de France.
- Miguel Indurain, Spain ('91, '92, '93, '94, '95)
- Lance Armstrong, United States ('99, '00, '01, '02, '03, '04, '05)



Lance races with second-place finisher Jan Ullrich of Germany, his most serious competitor in the Tour de France.

For More Information

. . . **about Lance Armstrong**, visit:

- Lance Armstrong online
www.lancearmstrong.com

. . . **about the Tour de France**, visit:

- www.letour.fr
- www.velonews.com
- www.cyclingnews.com

. . . **about bicycle racing**,
contact your local bike shop or visit:

- USA Cycling: www.usacycling.org
- American Cycling Association:
www.americancycling.org
- Union Cycliste
Internationale
(International Cycling
Union): www.uci.ch



Name _____

INSTRUCTIONS: Cut out the sentences at the bottom of the page. Paste the sentences in the order that they happened to Lance Armstrong. Use the book to help you.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Formed the Lance Armstrong Foundation to support cancer patients.

Went to the 1992 Olympic games in Barcelona, Spain.

Was diagnosed with cancer in 1996.

Won the Iron Kids Triathlon.

Began to feel extreme pain.

Won the Tour de France three years in a row.

Went through chemotherapy and recovered from cancer.

Name _____

INSTRUCTIONS: Each syllable contains a **vowel**. Break up these words into syllables. Tap out the syllables as you say them. When you are finished, choose three words and write them in a sentence.

Example:

qualified

qual + i + fied

elephant

volcano

chemotherapy

determination

Lance

cancer

mistaken

positive

impossible

courageous

surviving

shoe

athleticism

champion

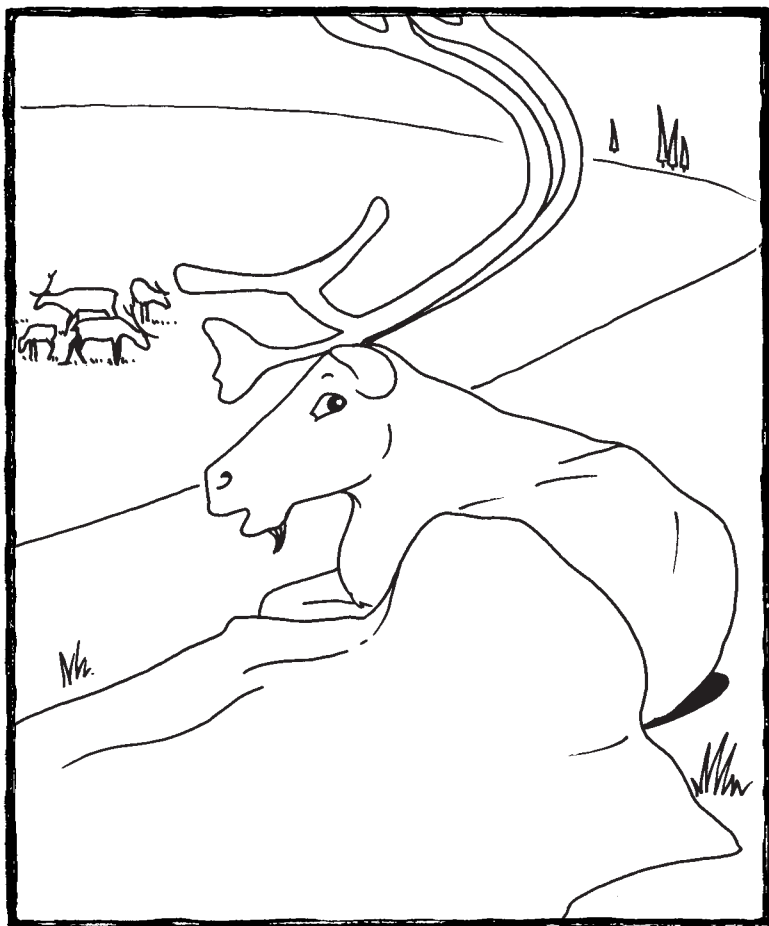
pain

My Sentence:

Caribou Man

A Reading A-Z Level T Leveled Reader

Word Count: 1,901




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Caribou Man



An Eskimo Folktale Retold by William Harryman
Illustrated by Maria Voris

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Caribou Man



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This story is condensed and adapted from an Eskimo folktale. The northern Native Americans inhabiting Alaska and northern Canada have retained the name "Eskimo," rather than adopting the more general name "Inuit."

Pronunciation Guide:

Onhgarouk.....ON-gar-ook

Arnorriiar-NOR-ee

kazhgie.....KAUZ-gee

ptarmiganTAR-mi-gan

Caribou Man
Level T Leveled Reader
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Retold by William Harryman
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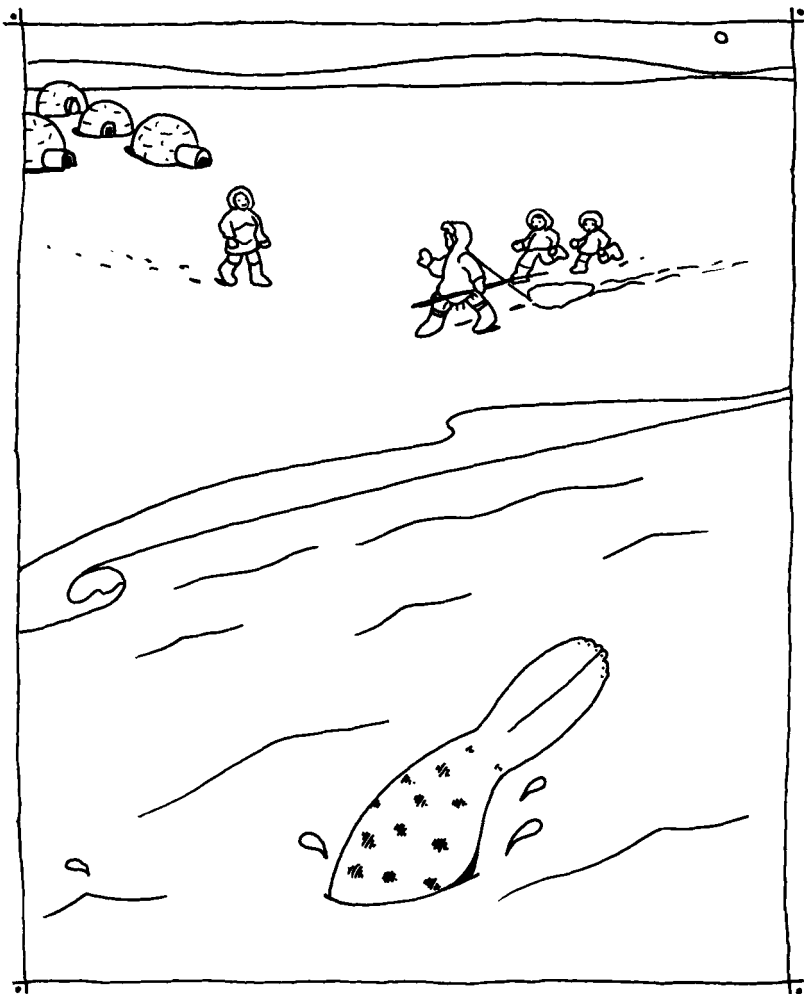
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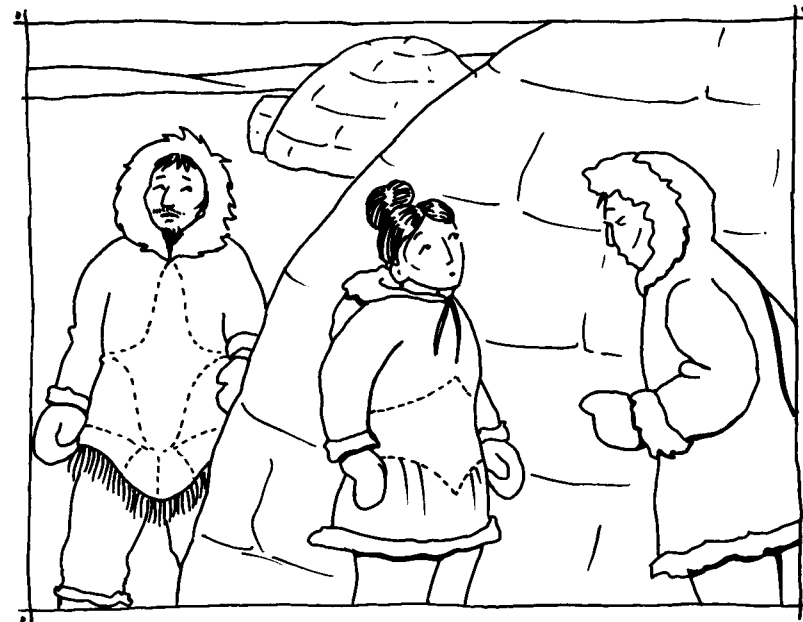
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Correlation

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Grade	3
Fountas & Pinnell	P
Reading Recovery	23
DRA	38



Many, many seasons ago, the uncle of my uncle lived with his wife, Arnorrii, and two children. Their home was an igloo in a village near the sea. Onhgarouk was a decent husband and father, and a gifted hunter who provided well for his family.



One year, however, the winter was extremely severe. The traps were almost always empty, and the hunting was meager. Onhgarouk tried to furnish meat to feed his family, but the winter was long, and he grew weary. He even overheard his wife's father telling her that Onhgarouk was a terrible husband. Those words made Onhgarouk's heart hurt, because he knew he could be a better husband. The father wanted to take Arnorrii back to her home village where food was more plentiful. She was loyal, though, and remained with Onhgarouk.

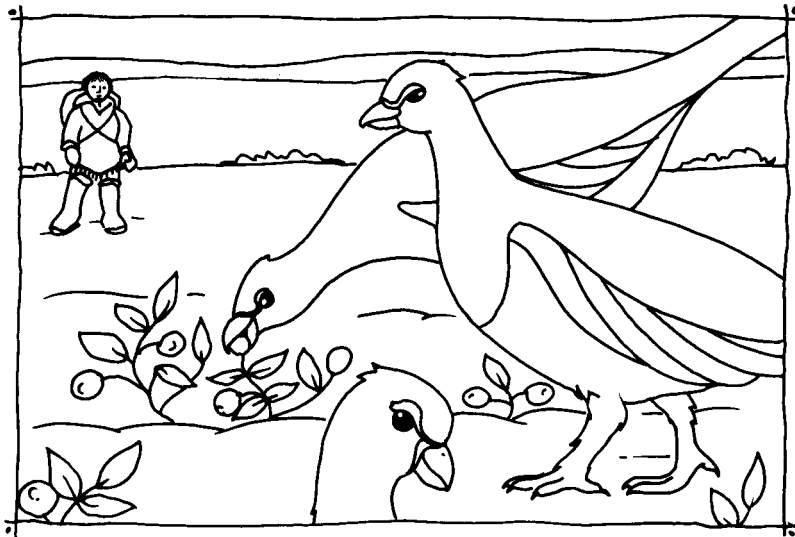
When the season turned and the hunting improved, Onhgarouk still remembered the harsh winter and wished to know how to make life less difficult. He remembered what Arnorrii's father had said and also wished to become a better father and husband. He spoke with his brother, and his brother suggested that things would get better. But Onhgarouk's mind was set, and he decided to leave. He told his brother he was leaving to learn more about life and asked him to watch out for his family.



The next day Onhgarouk showed his wife how to take care of the traps. He told her where he kept the spears, bow and arrows, and the sharpest knife. When he told her that he was leaving the next morning, she pleaded with him to stay, insisting that her father hadn't meant the things he had said. But Onhgarouk explained that he felt the need to become a better man, and he left the following morning.

Onhgarouk wandered the treeless tundra for many moons. Over time he became angry and grew to dislike the loneliness of his life. He had learned nothing about being a better man. He wished to be something else, believing that other animals did not suffer the complicated lives of humans. As he wandered inland, he discovered a flock of ptarmigan. The birds, surrounded by green plants, seeds, and small berries, looked happy and their life seemed easy.

"Well," said Onhgarouk, "if I could be a ptarmigan, my life would be simple. Then I might find happiness."



He stayed close to the small flock, watching them, hoping they might pity him and use their magic to change him into a bird. As the ptarmigan flew from place to place in search of food, he followed, looking for them. But every time he found them, they moved to another spot. All day it went like this, until at sundown the ptarmigan settled into a small village just over a ridge.

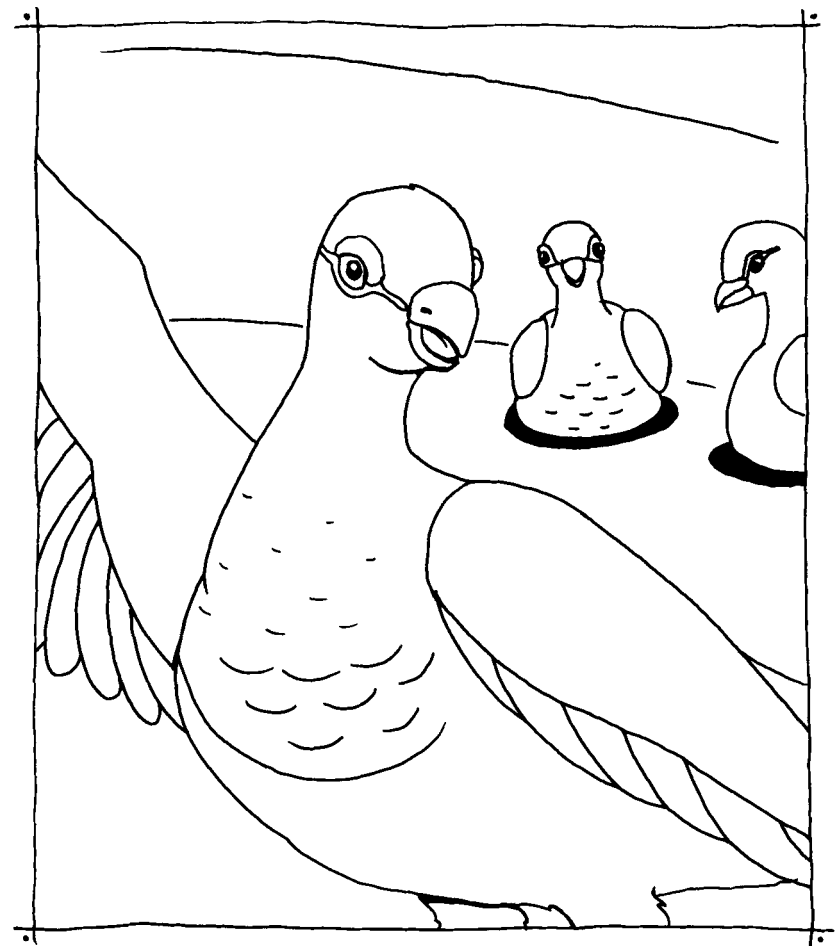
Onhgarouk followed the ptarmigan to their village. He walked straight to the kazhgie, the central house where the single male birds lived. Inside the kazhgie, many ptarmigan sat around the fire in the corner of the room.

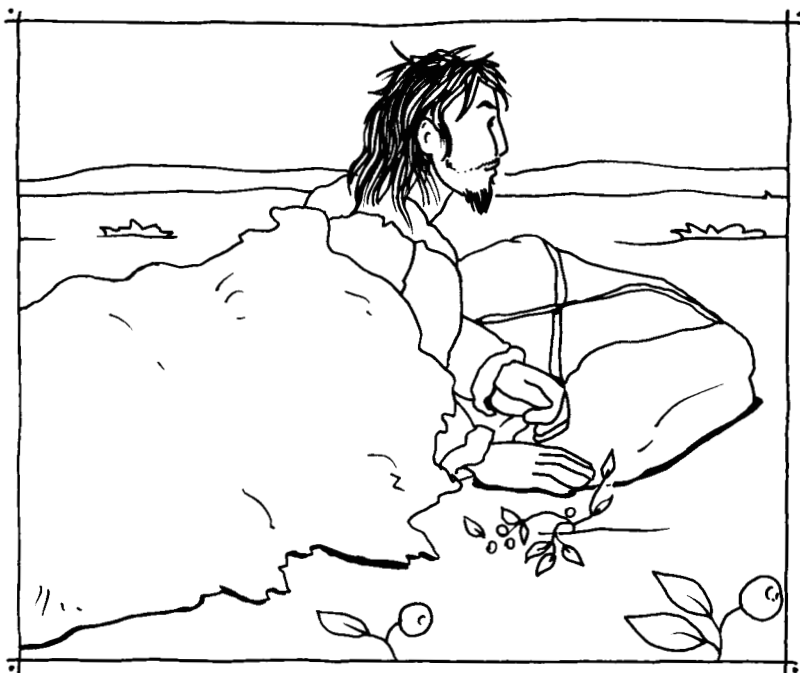
"Human, why have you been following us all day?" the chief ptarmigan inquired. He did not seem angry.

Onhgarouk replied, "I followed you hoping to become a ptarmigan. I am tired of being a man and want a better life."



The chief stood and faced Onhgarouk. "Our lives are not so simple. While it is nice to be able to fly, and we seldom lack food, it's not easy being a ptarmigan. There are many creatures, both in the sky and on land, that hunt us. Our lives are always in danger. Surely this is not the life you seek."





Onhgarouk had not considered these problems. The chief was right—this was not the life he was seeking. The chief graciously allowed him to sleep in the kazhgie that night.

Onhgarouk was very fatigued from walking all day and fell asleep immediately.

When Onhgarouk woke the following morning, all the ptarmigan were gone, as was the village. Everything had disappeared except Onhgarouk and his pack.

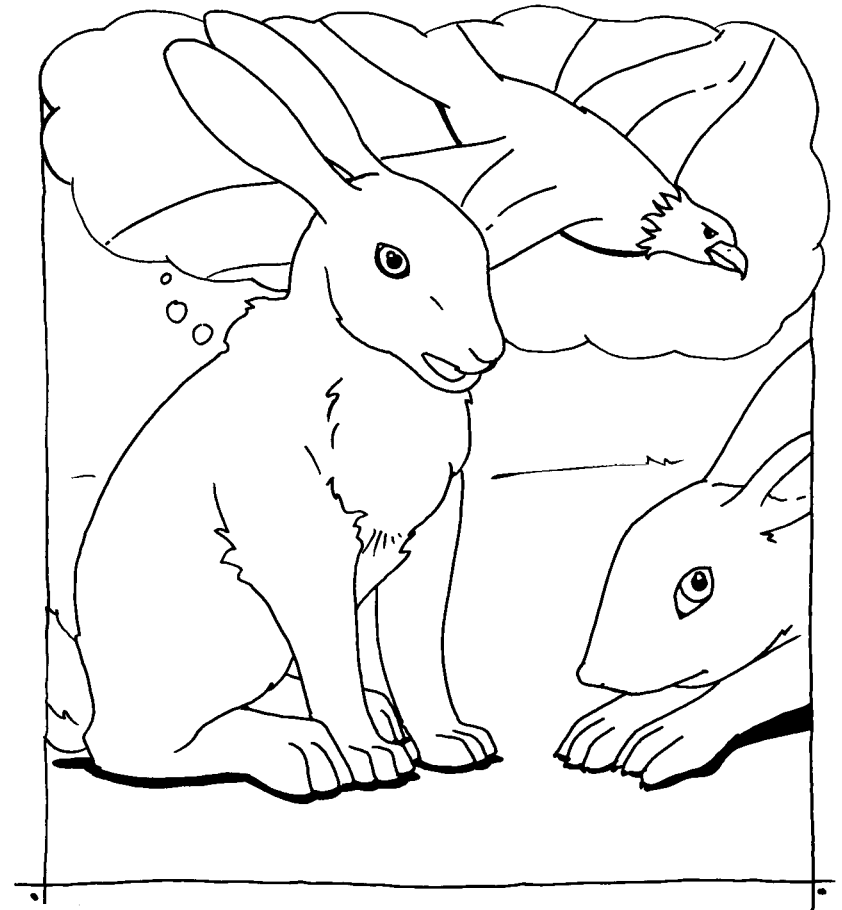


Once again, Onhgarouk began his search for a better life. He didn't know where he was going and didn't care. Around midday he noticed two snowshoe rabbits playing in the bushes. He watched them chase each other and laugh as they played.

For the remainder of the day, he followed the rabbits, hoping to talk with them. But each time he got near, they disappeared over a hill. He followed them all day, just as he had the ptarmigan.

Just after sundown, he found the igloo in which the two rabbits lived. When he entered the igloo, the rabbits asked why he had followed them.

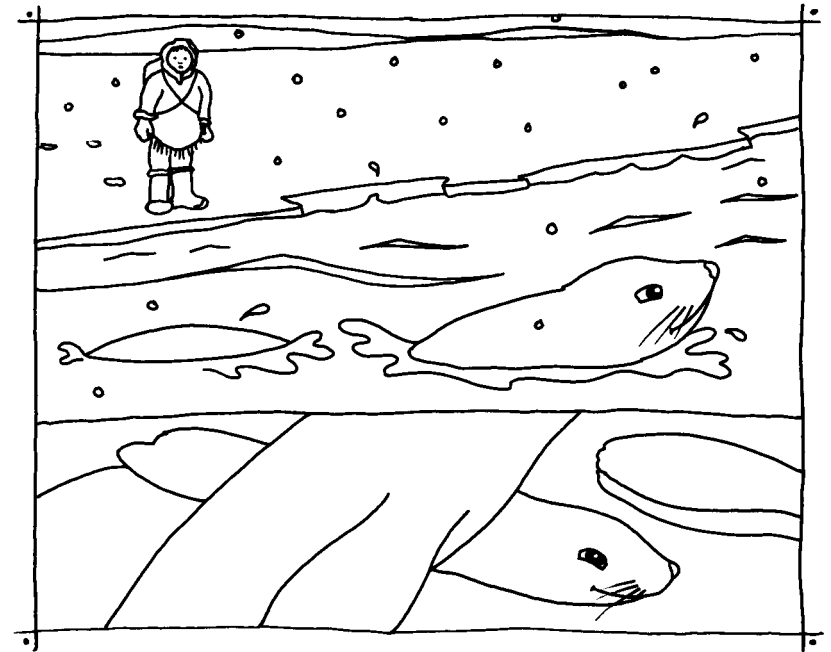
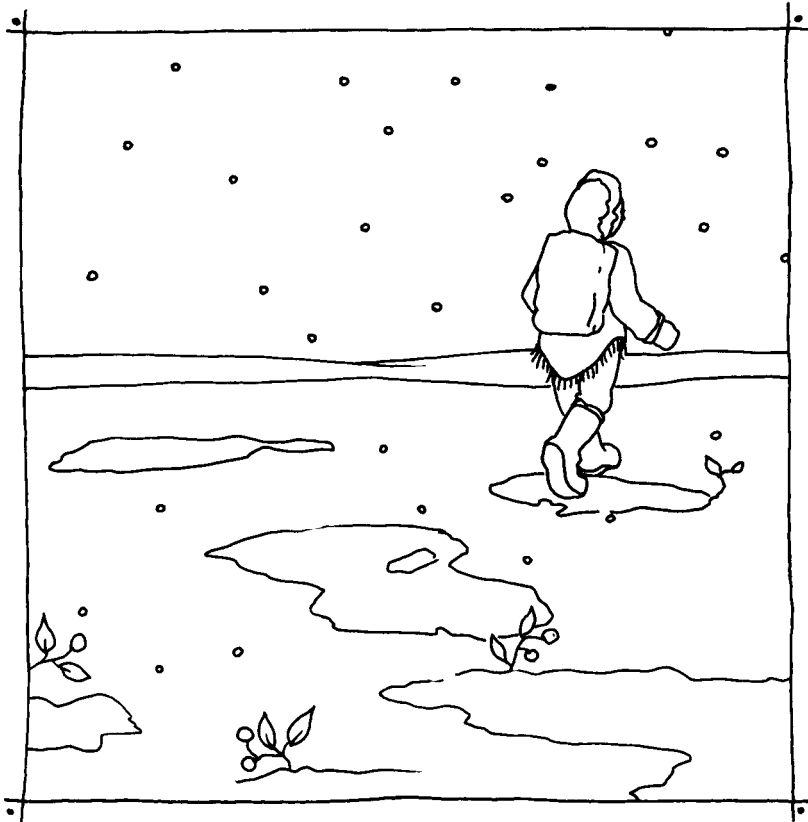
Onhgarouk explained how difficult it was to be a human. As he spoke, the rabbit people served him some dinner. He told them that he wanted to become a rabbit so his life could be playful like theirs.



When he finished speaking, the male rabbit spoke. "Our lives look carefree, but at any moment an eagle or a hawk could take us for dinner. Or a fox or a wolf might chase us for a snack. Even smaller animals take our children. We play as we do because we may not see tomorrow. Surely, that it is not the life you wish for."

Onhgarouk agreed that being a helpless rabbit was not what he wanted. The rabbit people offered him a blanket, and he was soon deep asleep.

When he woke, the igloo, blanket, and rabbits were gone. Again, Onhgarouk wandered aimlessly across the tundra, searching for a better life where he could be happy and uphold his responsibilities.

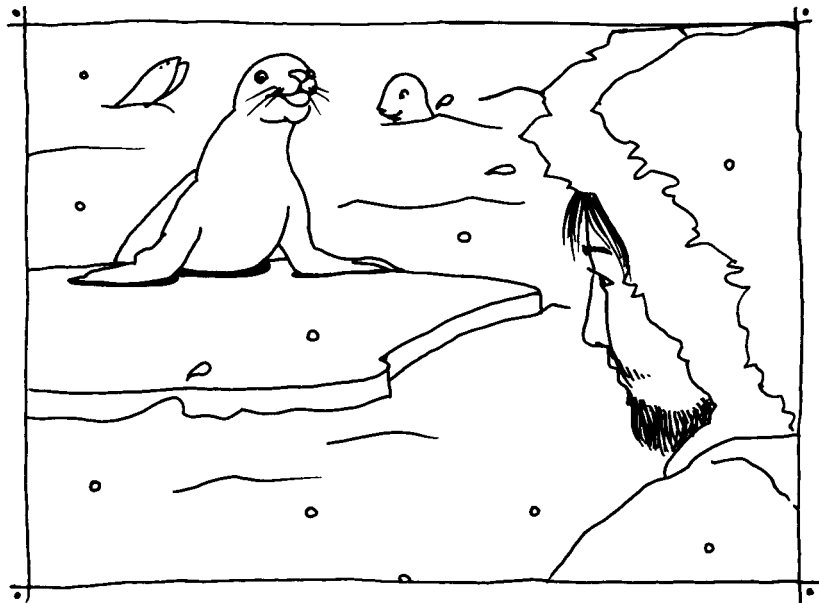


In the afternoon, Onhgarouk approached the coastline. As he neared the water, he spotted several large bearded seals swimming near the surface. They moved gracefully in the water, and they had plenty of fish for food. "Their life must be pleasant," he thought to himself. He tried for hours to get close enough to speak, until finally he could talk to the seals.

"Please, Brother Seal," Onhgarouk said to the largest of the three, "I have traveled very far to become one of you."

The large seal swam up to the edge of the ice beside the Eskimo and listened as he told the same sad story all over again. When Onhgarouk had finished explaining his life, the seal thought for a moment and then spoke.

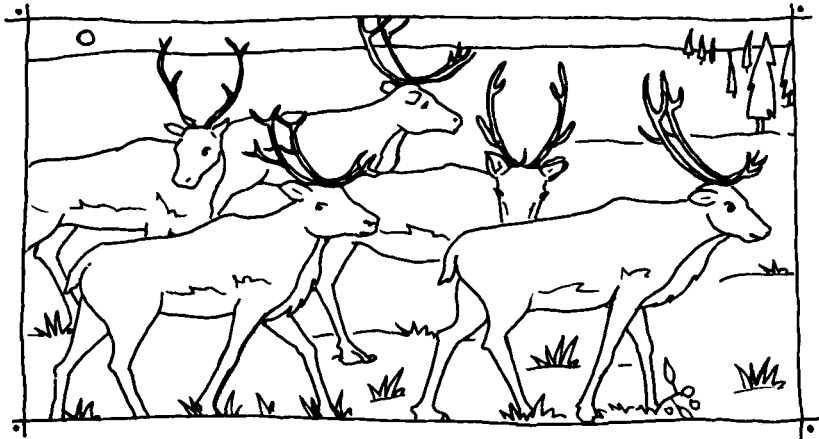
"You don't want to be a seal," he said. "Our lives may look easy, but we are afraid much of the time. Whenever we approach a hole in the ice for air, we fear a hunter or a bear is waiting for us. Besides," he confided with a shiver, "even with our layer of fat, this water is very cold."



Onhgarouk had not considered the difficulties of living as a seal and decided this was not the life he wanted. Because it was evening, the seals invited him to sleep in their igloo for the night. They prepared fish for his dinner, after which he quickly fell asleep.

When he woke up, the seals and the igloo were gone. Onhgarouk gathered his things and resumed his quest across the tundra. He was convinced that today he would find an animal with the better life he wanted.





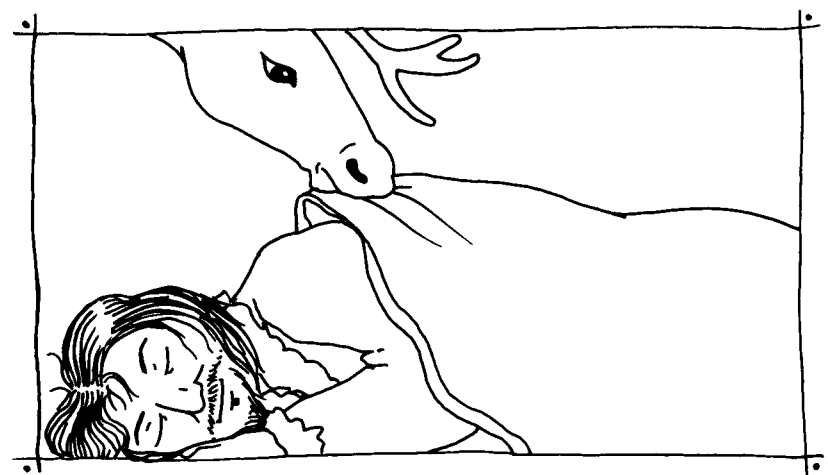
Soon Onhgarouk spotted a herd of caribou. He hid behind a tree and watched them graze on thick grass. They looked so strong and healthy. Some of them were even fat. With such a large herd, he assumed they must be safe from other animals. He decided he wanted to join their herd.

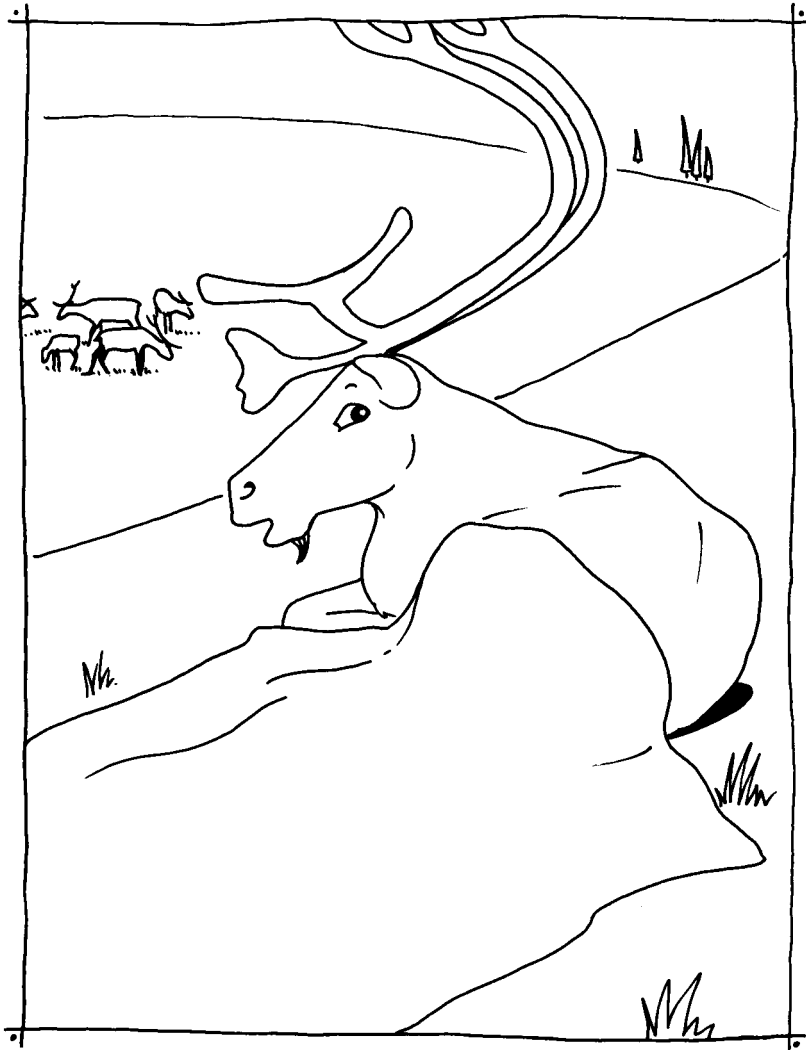
When he approached, just as he had with the ptarmigan, rabbits, and seals, they disappeared. As the sun sank low in the sky, he noticed the herd lope over a small hill. When he peered into the valley where they had disappeared, he saw many igloos and a large kazhgie in the middle of the village. He quickly walked down into the village and entered the kazhgie.

The leader of the caribou people saw Onhgarouk and walked to meet him. All the caribou in the kazhgie stopped their conversations and turned to stare at him. "Tell me, human," said the leader, "why have you been following us all day?"

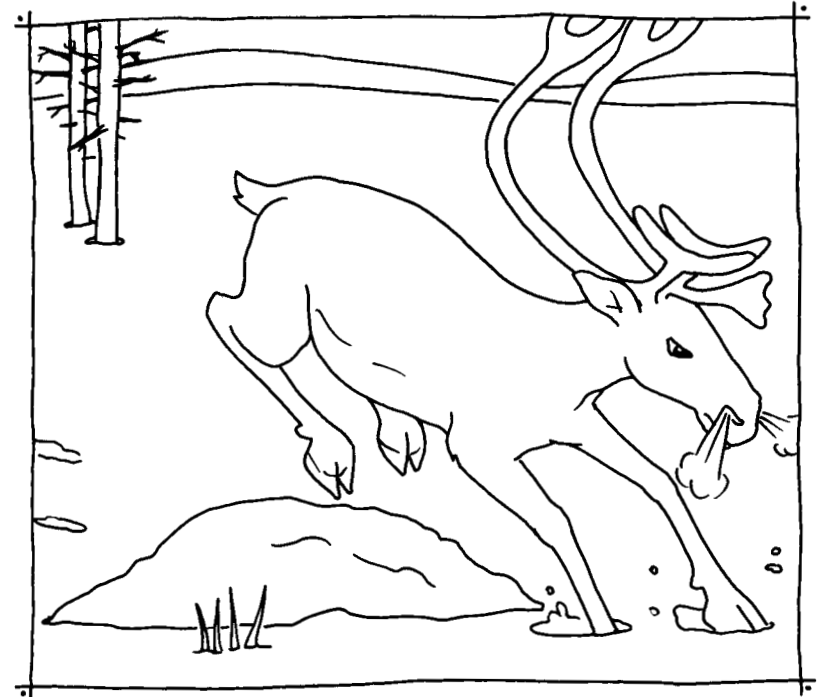
Onhgarouk replied, "I have watched you and wish to become one of you."

He told the same old story about his difficult life. The caribou people offered him some dinner, which he gratefully accepted. They listened to his story and his desire to learn more about life as a caribou. The caribou leader, offering him a blanket, suggested that he sleep on his decision.





When Onhgarouk woke in the morning, the village had vanished. There was only a herd of caribou grazing in the valley. But something miraculous had happened—he was now a caribou, too!

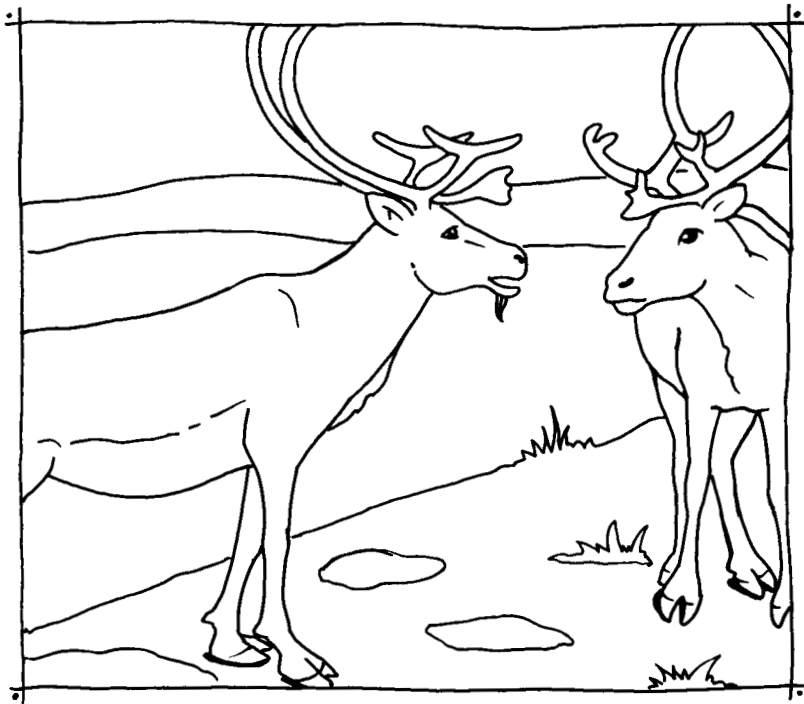


For many years Onhgarouk lived among the herd, considering himself a member of the caribou family. Over time he became big, strong, and rather quick for his size.

Although the herd was often preyed upon by wolves, and some of his brothers were taken by Eskimo hunters, he always managed to escape. He also learned to avoid the traps that killed some of his friends. Life wasn't easy, but he was happy and content to be a caribou.

After many years had passed, though, Onhgarouk began to miss his wife and children. He realized he had learned many things about life. He felt he was ready to resume his life as a human.

He decided he wanted to return to his former life. He approached the leader of the caribou and asked if he could return to life as a human. Understanding his feelings, the sympathetic leader told Onhgarouk he could become human again.

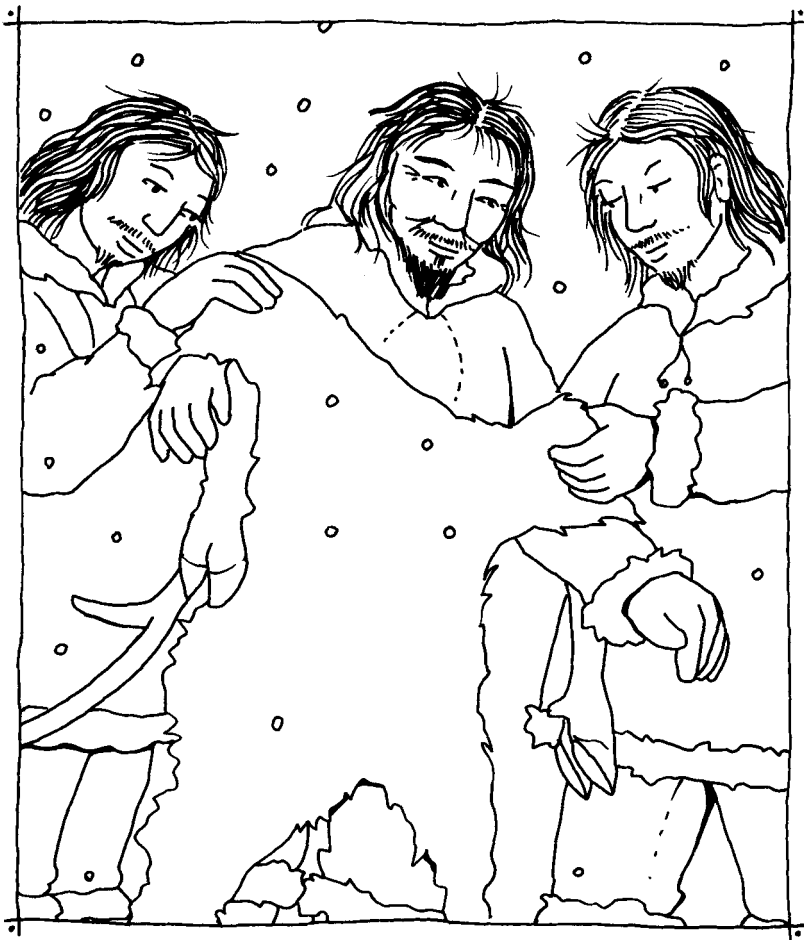


Onhgarouk thanked the caribou leader and left for his village, still a caribou. He traveled many difficult days and had to avoid many traps and hunters, until he finally reached his village by the sea.

As he neared his old house, he tripped into a snare trap and was caught. Two men quickly came running, surprised to have caught a caribou so close to home. When they approached the large animal to kill it, the caribou spoke to them in a human voice.

"Please release me and remove the fur from my head," the animal said.





The two men just stared for a moment, never before having heard a caribou speak. The caribou repeated his request, and they finally agreed. The men saw that it was a man beneath the fur. The caribou man asked them to remove the fur from the rest of his body until he was completely human again.

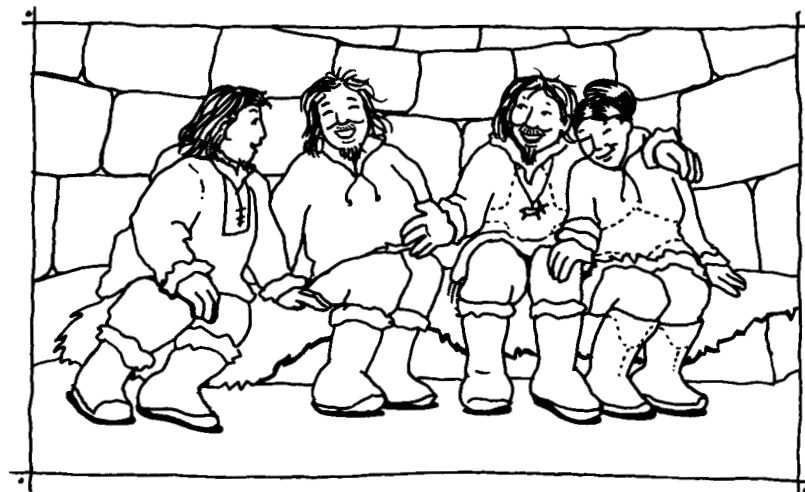
After they finished, the two men invited Onhgarouk home with them. When he entered their house, he was speechless. His wife, Arnorrii, stood looking at him and recognized him at once. She had waited for him, always believing he would return. The two young men were his sons who had grown to adulthood.

Onhgarouk was happy to be home. But Arnorrii was angry that he had left her alone all those years. He begged her forgiveness, explaining he had learned many things in his time away.





When others in the village heard of Onhgarouk's adventures and his life as a caribou, all the hunters came to him for advice. But he would not betray the secrets of the caribou. The villagers believed only a great medicine man would have been given the magic to live as an animal. They offered Onhgarouk a position as a tribal elder.



He declined their offer to become an elder, telling them he wanted to spend his remaining days with his family. Still, the villagers believed he had acquired great wisdom and trusted his opinions. He always used the wisdom he had learned from the animals when he gave advice.

Onhgarouk spent the rest of his life making his wife happy and getting to know his sons. He provided meat for meals, shared the chores with Arnorrii, and always remembered to tell her how much he loved her. After a while, she forgave him for leaving, and they grew old together in happiness and harmony.

Name _____

INSTRUCTIONS: Story plan.

Setting / Main Characters



Problem



Sequence of Story



The Solution



Theme



The Moral or Message

Name _____

INSTRUCTIONS: Break the following words with double-medial consonants into syllables.

Word	Prefix	Syllable	Syllable	Suffix
happy		hap	py	
following		fol	low	ing
disappear	dis	ap	pear	
allowed				
village				
rabbit				
surrounded				
unhappy				
valley				
middle				
offered				
happiness				
berries				
better				
villagers				

Cathy Freeman

A Reading A-Z Level T Leveled Reader

Word Count: 1,634

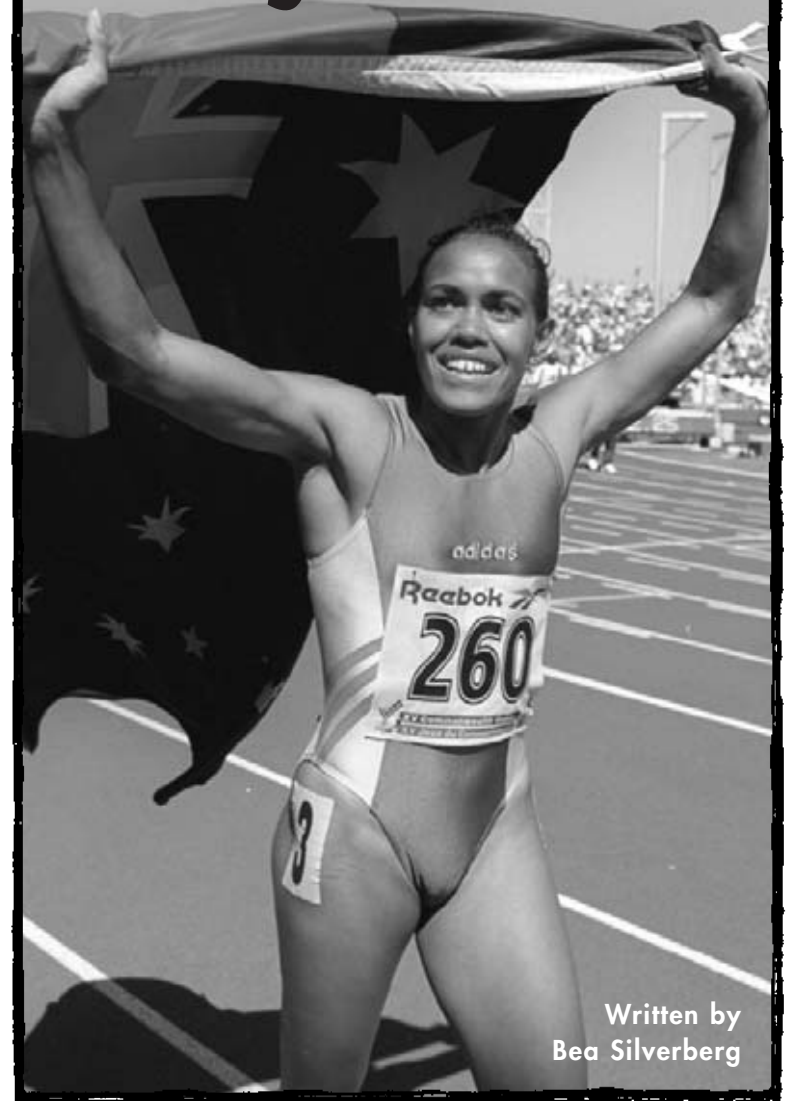


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Cathy Freeman
Level T Leveled Reader
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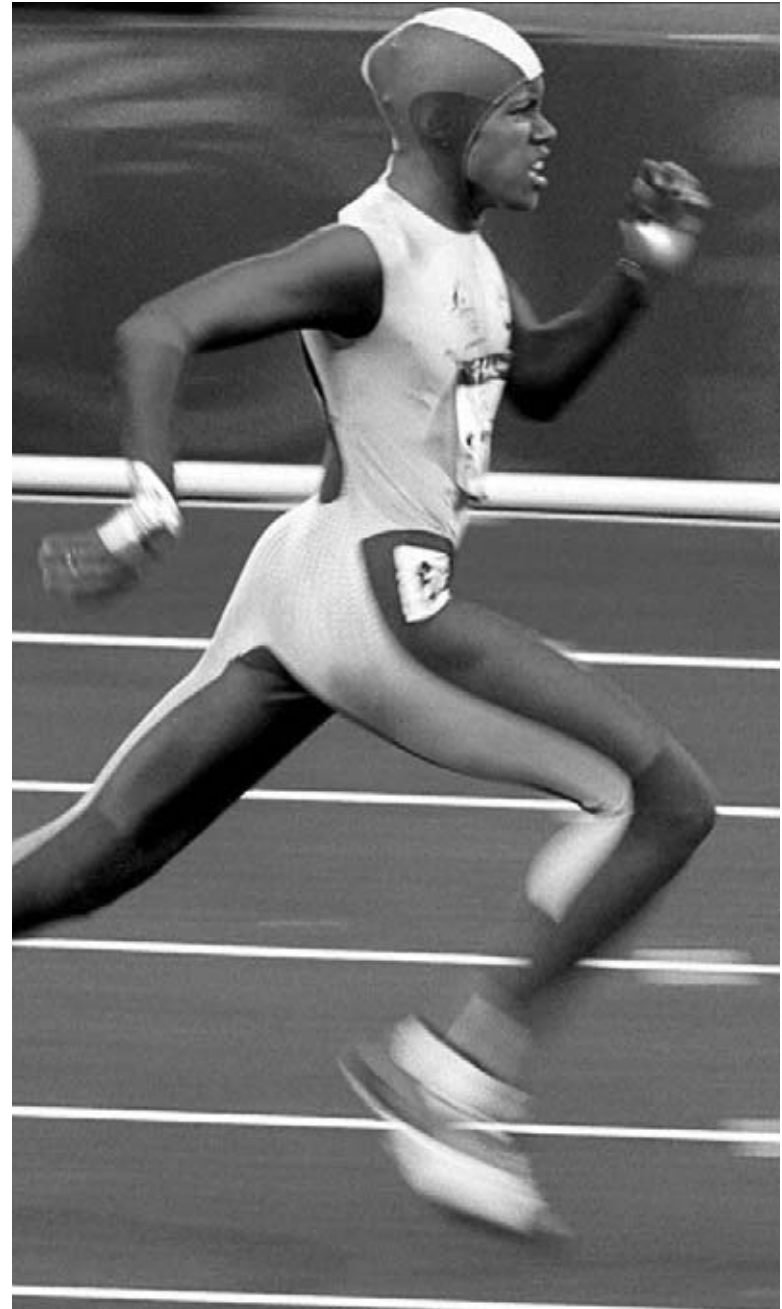
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Reading Recovery	23
DRA	38

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Cathy Freeman at the 2000 Olympic Games in Sydney

Introduction

The whole world watched a determined young woman win the gold in the 400-meter dash at the 2000 Olympic Games in Sydney, Australia. Her name is Cathy Freeman. She is an Aborigine—one of a group of people who are native to Australia. She accepted the medal for her country, Australia, and for her people, the Aborigine. She was the first Aborigine to capture such a high honor. She is a powerful symbol of the hopes of the Aboriginal people. She is also a powerful symbol for more understanding among people all over the world.

Aboriginal and Australian Past

The Aborigine (ab-uh-RIJ-uh-nee) are the first people who lived in Australia, before Europeans settled there. The word “Aborigine” means “from the beginning” and refers to the indigenous, or original, people of Australia. They roamed the country both in the milder coastal regions and in the harsh interior desert lands, called the “outback.” They are a dark-skinned people, grouped into tribes, with their own spiritual beliefs and ways of living.



An Aboriginal man



Captain James Cook claiming Australia for Great Britain

English explorers under Captain James Cook claimed Australia as a colony for Great Britain in 1780. British settlers soon followed. They believed their way of life was better than the tribal ways and called the Aborigines inferior. There was a great deal of fighting between the newcomers and the Aborigines. The British newcomers had much more powerful weapons and were able to defeat the Aborigines.

The fighting was often very cruel, and large numbers of Aborigines were killed. The British set up a new government based on the British way of life. They ruled the whole country and forced their own religion, Christianity, on the Aboriginal people.



Aborigines meet British soldiers in the Australian bush

The new rulers looked upon the Aborigines as savages and gave them no rights. Aborigines were forced to live separate from the settlers. Most of the Aborigines lived in the remote outback, often placed on reservations or church missions. Some lived on the outskirts of towns where they worked for the Europeans for little or no pay. The government tried to force European ways on the Aborigine people and destroy their languages and their ways of living and believing.

Over 200 years ago when the English first settled in Australia, there were between one million and three million Aborigines speaking about 250 different languages. Now there are only about 200,000 (45,000 full-blood), speaking only 100 languages. They have died off in very large numbers during the past 200 years. They have died because of terrible fighting, diseases brought by the Europeans, and poor living conditions.



An Aboriginal woman

Even as recently as 1951, the Australian government passed laws that did not allow Aborigines to own property. They were not allowed to take certain jobs, to marry whom they wanted, to move where they wanted, or to live by their own ways.



Hero Black, king of the Aboriginal Menindee tribe, his wife, Gladdie, and their daughter in the Australian outback

Cathy's Early Years

Catherine Astrid Salome Freeman was born to Aboriginal parents on February 16, 1973. She grew up in a small town on the east coast of Australia with her immediate family and many cousins. Cathy's grandfather, known as "The King," was an outstanding football player and an excellent runner. Her father, Norman Freeman, also a fine athlete, upheld the family's reputation on the football field. Cathy was fortunate to have inherited her athletic talent from both of these men.

Cathy's mother, Cecelia, was half Aborigine. She had been raised on Palm Island, off the Queensland coast. Cecelia's mother (Cathy's beloved Nanna Sibley) and her relatives were removed from their tribal home to Palm Island. This was part of the government's rulings to move Aborigines away from their original land. This kind of unjust treatment in her own family helped Cathy to develop a fighting spirit.

When Cathy was five years old, her father left the family after being very sick

and developing a drinking problem. Cathy's mother struggled to earn a living to support her family. Her second daughter, Anne-Marie, had been born with a disabling illness. At nine years of age, Anne-Marie had been placed in a home for children with special needs. To Cathy, her sister's disability reminded her of how fortunate she was to have a healthy, strong body with which to accomplish her dreams.

Cathy ran her first race when she was six. Her teachers and her new stepfather, Bruce Barber, recognized her speed, grace, and energy as she ran laps around the local track. Bruce predicted that she would become an Olympic star, and he set about to help make it happen. Cathy started her training with the dream that she would some day become a champion Olympic runner.

At age eleven, Cathy set a new national record in the high jump at a big track meet in Melbourne. In the same year, she won state titles in the 100-meter and 200-meter sprints and the high jump for her age group.



Cathy at
age 11

Encouraged by her family, Cathy attended excellent high schools on scholarships. She trained under a professional coach who prepared her for her first great victory when she was sixteen. She won a gold medal in the 4 x 100-meter relay team at the Commonwealth Games in 1990. That same year, she was voted Young Australian of the Year. In the following year, she was named Aboriginal Athlete of the Year.

The Aborigines Win Some Rights

During the decade of the 1960s, Cathy's tribal people were speaking out to gain more rights. The first important success was a law passed in 1967 that allowed Aborigines to become citizens. This law gave them the right to vote and to receive some government benefits. They were finally able to have a say in Australian government policies.



An Aboriginal protester at Parliament House in Canberra



Aboriginal territory sign, Uluru National Park, Australia

The Aborigines also spoke out to protect their lands. Their belief, similar to Native Americans in the United States and Canada, is that the land is sacred and cannot be owned by individuals. They worked to protect their land from development and from use by non-Aborigines who would not treat it with respect. They also worked for the right to have their own government instead of being governed by European laws that did not respect their ways. In 1972, a law was passed that gave the Aborigine some of the rights they demanded.

Cathy on the Road to Success

These gains in citizenship and the right to own and manage land were great victories for the Aborigine. They have had more than 200 years of mistreatment to overcome. Cathy Freeman was becoming widely known for her amazing running ability, but as an Aborigine she still had to deal with many non-Aborigines thinking she was inferior.

Cathy took great pride in who she was and wanted all the people in Australia to be proud of her accomplishments, both as an Aborigine and as an Australian. She tried to speak out to correct the wrongs against her people. It wasn't always easy, but she had courage and determination.



Cathy in the 200-meter event at the 1993 Panasonic AAA Championships in Birmingham, England



1994
Commonwealth
Games in
Victoria,
British
Columbia,
Canada

In 1994, at the Commonwealth Games in Victoria, Cathy won gold medals in the 200-meter and 400-meter races. In celebration, she ran around the track carrying both the red-white-and-blue Australian flag and the black-red-and-yellow Aboriginal flag. Some people disapproved of her showing the tribal flag. They said what she did was an act of protest. Cathy responded that she was merely showing her national pride. After some time, it became clear that all the people of Australia, both non-Aboriginal and Aboriginal, were looking upon this young, remarkable, world-class runner as a real champion. She was winning the support of all people in her rise to fame.

Cathy's dream of going to the Olympic Games came true in 1996 at Atlanta, Georgia. She ran the 400-meter dash in her best time ever. It made her the sixth fastest woman in history, but she lost the gold medal to an even faster runner. She did win the silver, and with it, the respect and admiration of the Australian people.



Cathy takes the silver medal in the women's 400-meter final at the 1996 Olympics in Atlanta, Georgia

The following year, she won a major international track title at a World Championship event in Athens, Greece. As she circled the stadium in the victory lap, she again carried both the Australian and Aboriginal flags, and no one objected. Soon after, she was named Australian of the Year. This took her another step toward being an important role model for Aborigines. In doing so, she was helping all Australians come together as one people.



Carrying the Australian national flag and the Aboriginal Community Flag after winning the women's 400-meter event in Athens



Athletics World Championship, 1999, Sevilla, Spain

The years 1998 and 1999 brought Cathy even more success. She again won the 400-meter title at a World Championship event and the national title at Melbourne. She showed her great belief in herself and in her ability to succeed through constant training. She would not let success go to her head. Cathy said, "Money makes life easier but I don't want to be rich. . . . I don't want to be a celebrity either. . . . As long as my family and loved ones are there, I'm happy. . . . My family has always come first. I have always found security and comfort in their arms."



Carrying both flags during a victory lap at the 2000 Olympic Games in Sydney

Olympic Fame

The Olympic Games of the Year 2000 were held in Sydney, Australia. Cathy Freeman was a leading contender for a gold medal. She was honored by being chosen to light the Olympic torch. Then, in a stunning 400-meter run, Cathy won Australia's 100th gold medal in a stadium in her own country. All Australians cheered wildly as they watched her carry both flags in her victory lap. Together they sang the national anthem and proudly spoke about "our Cathy." Cathy presented her bouquet of Australian flowers to her mother, Cecelia, whose teary face was filled with pride and joy.

Cathy Freeman is a real world champion, both on the running track and in life. She has become a role model for all Australians. She has shown the world that you can become what you want to be by working hard to reach your goals. And for the entire world, she has given hope for greater understanding among all people.



Cathy at the awards ceremony after receiving a gold medal in the women's 400-meter race at the 2000 Olympic Games in Sydney

FOR MORE INFORMATION

About Cathy Freeman

- www.melbournetrackclub.com.au

About Sports

- www.museum.olympic.org
- www.commonwealthgames.com

About the Australian Aboriginal People

- www.atsic.gov.au/default_ns.asp
The Aboriginal and Torres Strait
Islander Commission (Australia's main
Indigenous agency)
- www.vaclang.org.au
Victorian Aboriginal Corporation
for Languages

Name _____

INSTRUCTIONS: Read the following sentences. Check whether they are fact or opinion.

	Fact	Opinion
Cathy Freeman was born to Aboriginal parents on February 16, 1973.		
She is a powerful symbol of the hopes of Aboriginal people.		
Cathy ran her first race when she was six.		
In the same year, she won state titles in the 100m and 200m sprints.		
Cathy was becoming widely known for her amazing running ability.		
And for the entire world, she has given hope for greater understanding among all people.		

Name _____

INSTRUCTIONS: Add one of the following prefixes to the words below to form new words.

un

re

mis

dis

Word	New word
remarkable	
capture	
gain	
understanding	
belief	
treated	
respect	
allow	
treatment	
prepared	
clear	
allowed	
successful	
inherit	
professional	

Ricardo's Dilemma

A Reading A-Z Level T Leveled Reader

Word Count: 1,910



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Ricardo's Dilemma



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Illustrated by David Cockcroft

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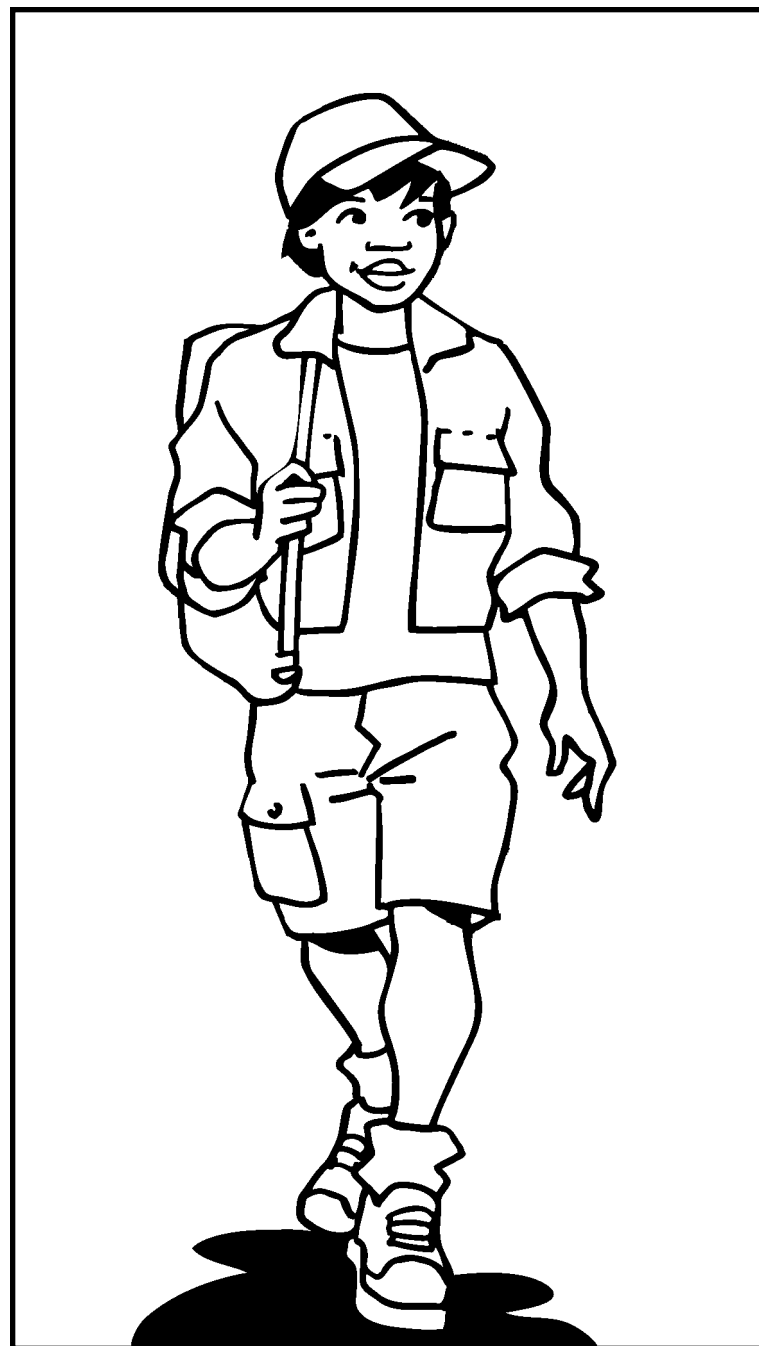
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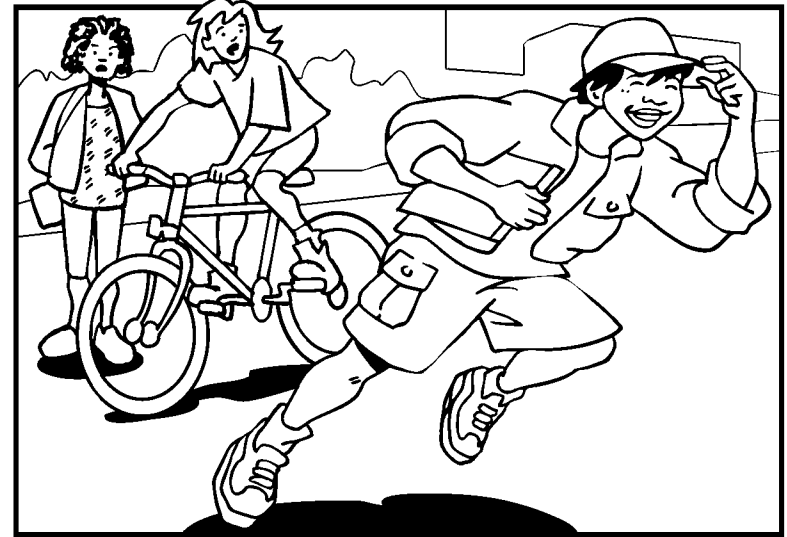


Chapter 1

"Now listen up, class. Don't forget to bring a sack lunch tomorrow for our field trip! We'll have such a wonderful time!" Mrs. Periwinkle called out.

Luckily, the end of the school day had finally arrived. The bell rang, and Ricardo was almost safely out the door when Mrs. Periwinkle stopped him in his tracks. "Aren't you looking forward to our field trip for tomorrow? I am very excited for you to see the ballet and tour the Opera House. I know you'll just love it."

"Oh yeah, of course I'm excited. Thanks, Mrs. Periwinkle. I'll see you tomorrow." Ricardo forced a smile for his teacher as he walked quickly past her and into the hallway. The truth was, he was much more excited about the playoff soccer match against the Tigers, and the match was going to start in less than two hours. Ricardo was the leading scorer on his team, and the playoff game was all that his mind had been occupied with for several days. He reached the front door and headed outside. His fast-paced walk turned into an enthusiastic sprint as he pulled his cap tightly down over his head. "Look out, Tigers, here we come!" he shouted.





Chapter 2

The following morning, Ricardo sat smiling as he remembered the winning goal he had scored at the playoff match. "I knew we would win!" he told his mother as she joined him at the breakfast table. "We're going to be the champions this year. I can feel it in my bones!"



"That's great, dear. Now, are you ready? We have to get going. I agreed to go on the field trip with you and your class since I have the day off work. I think it's wonderful that your teacher is taking you to see the ballet. *Cinderella* is such a fun story, and besides, not everyone has the opportunity to see all that's happening backstage before the show begins. This is going to be a fabulous day. I can feel it in my bones," she said with a wink of her eye.

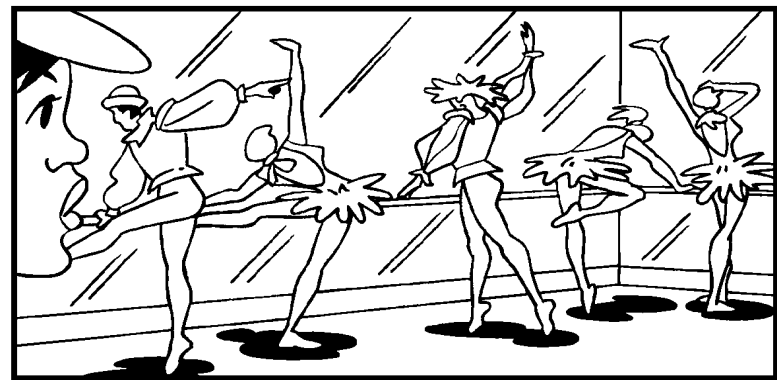
Ricardo rolled his eyes, then grabbed his backpack and said, "Okay, let's get this over with." Little did he know that this excursion would change his life forever!



Chapter 3

As the class entered the Opera House, Mrs. Periwinkle gave their tickets to the man at the counter. He made a call on his tiny black walkie-talkie, and soon a tall, skinny man appeared. Max was his name, and he had rosy cheeks and an enormous smile that made it almost impossible for anyone not to like him. With an exuberant wave, he led the class to an expansive space where a variety of strangely dressed people were milling around.

The tour guide told the students that these were the stars of the ballet, which, Ricardo supposed, would explain why everyone was meandering around in tights and slippers. Some were stretching their long legs toward the ceiling while standing on one foot, and some were turning in circles again and again, arms stretched above their heads. Still others were sitting on the floor, their upper bodies bent incredibly far to one side while they rolled their ankles in circles. They seemed to be focused so intently on what they were doing that they didn't notice anyone around them. Ricardo watched, amazed by their concentration. He couldn't have imagined that ballet dancers were so serious about their work. "Just like a player warming up before a big game," he thought to himself.





Max led the class to the backstage area where all the scenery pieces had been arranged and were now ready for the show. There were brightly colored costumes, and he could hear the orchestra warming up in the background. Everything looked so huge that it made Ricardo feel very small. The stage floor would soon be filled with the twirling, stretching bodies they had just seen in the studio. Ricardo felt the excitement grow even more as the luminous and colorful lights flashed on from the sides of the stage.

“Wow! This is really cool,” he exclaimed to his mother. She smiled and said that she thought so, too. Quickly, he looked down and stopped smiling. He reminded himself that he was a boy who liked sports, not the ballet, and he looked around, wondering if any of the guys had noticed his enjoyment of the field trip.

“Still safe,” he thought, assured that most everyone had been listening to Max. He heard Mrs. Periwinkle say that the show was about to begin. Max led them from the backstage area and down the stairs to where they would watch the show. As everyone sat in their places, the lights dimmed and the orchestra began to play. Ricardo couldn’t wait for the curtain to open.





Chapter 4

That night, Ricardo found it challenging to fall asleep as he lay in bed remembering the day. Mrs. Periwinkle was right—it *was* a cool field trip! He couldn't keep his eyes off the dancers. They were so strong, so athletic, so powerful and graceful. Was it possible to be all of those things at once? He remembered being so proud of his heritage when he saw the names of two Latino dancers. One was even named Ricardo. They seemed to enjoy themselves so much when they were on stage. At that moment, Ricardo decided that he wanted to learn more about ballet.

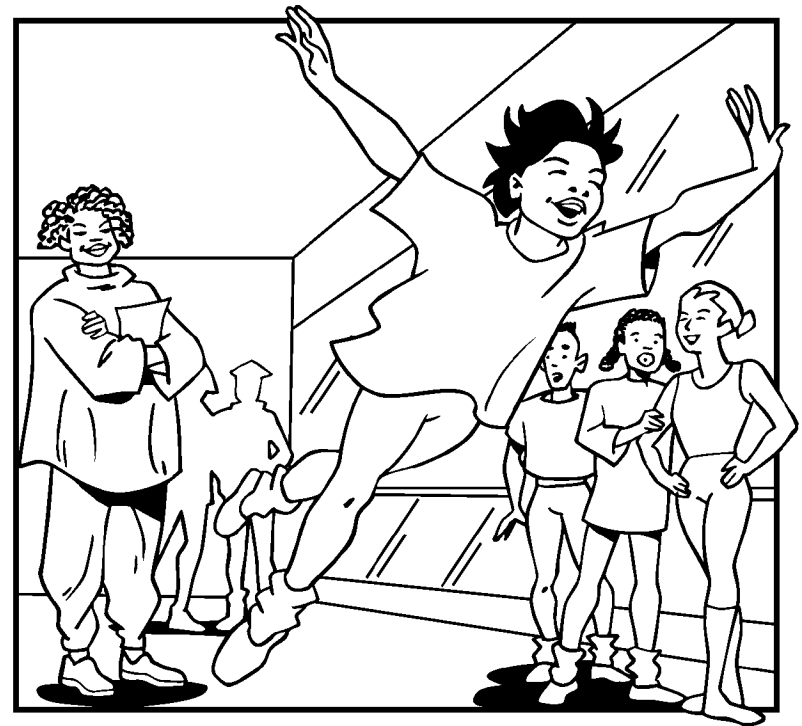
The next morning he shared his thoughts with his mother. "I think we should visit a dance studio and find out how much it would cost to take a few classes. That way, you could find out if you really like it or not," she said.





Ricardo really wanted to learn how to do all of the amazing things he saw the dancers perform. But what would his friends think? There weren't many boys who took ballet, and he was afraid his friends would poke fun at him. But Ricardo was self-confident. He was comfortable with himself, so he decided he would try a few classes. But he definitely did not want to share his plans with his pals. At least not yet.

Over the next few months, Ricardo took several lessons. His interest in dance began to grow, and his instructor told him that he was a natural. Playing sports had made him strong. His strength helped him perform new and difficult steps. He found that ballet was intense and challenging, but when he got something right, it made him feel like he was on top of the world. Little did he know that someday his dance skills would help him in ways he could not have imagined!





Chapter 5

One summer afternoon, Ricardo was wandering through the city zoo with his best friend, Zach. They had just finished a great soccer match—winning 5 to zip!

“Boy, it just seems like it’s impossible for us to lose lately! Our team this year is the best team I’ve ever been on. I don’t want the season to ever end,” Zach said. “Do you think our championship trophy will be silver or gold this year?”



“Definitely gold. And I hope it is six feet tall!” replied Ricardo. The boys laughed. They only had two more games to win to finish up the season as champions, and both were confident that they could pull it off.

Ricardo had been busy during the playoffs, but he managed to make it to ballet class three nights a week. It had become very important to him, and the better he got at it, the more he knew that he wanted to dance forever.

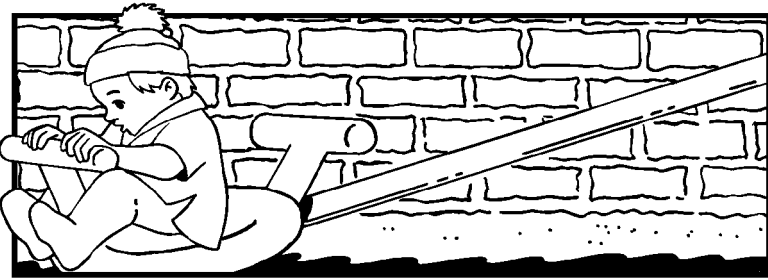
But Ricardo realized he couldn't keep his dancing a secret from his friends for much longer. He just hoped that they would somehow understand.

Today, at the zoo, he had planned to break the news to Zach. He practiced what he was going to say a million times in his mind. He thought and thought. Finally, he came up with a list of reasons why someone would want to learn ballet. He practiced saying the reasons over in his mind. (1) There are men all around the world who dance ballet. (2) Some dancers are very famous and make a lot of money performing. (3) Ballet is great exercise. (4) There are lots of cute girls in dance class who want to be his friend.



Ricardo smiled as he remembered all the girls telling him that he was so cool for learning ballet. Surely the guys would understand at least that part of it. At least he hoped they would. He took a deep breath and got ready to spill his guts to his best friend. Just then the strangest thing happened, and it happened so quickly that Ricardo didn't have time to think—he just went into action.





Chapter 6

Ricardo and Zach had just arrived at their favorite part of the zoo—the crocodile pond. They loved watching the enormous reptiles.

Ricardo had visited the zoo a lot, but he had never seen anything as crazy as what happened next. The boys were walking toward the croc pond when Ricardo noticed a baby girl crawling up onto the teeter-totter. Then from out of nowhere came this whirling, twirling, crazy kid. The kid suddenly jumped onto the raised end of the teeter-totter, not even noticing the baby! He was yelling over his shoulder to his friend, “Hey, dude! Get on!” As he jumped on one end, it slammed down and sent the other end flying upward. The infant was sent flying through the air, straight toward the crocodiles.

“Yikes!” yelled Ricardo as he sprang into action. Without even thinking, he put all of his ballet training to the test. He ran toward the pond as fast as his legs could carry him and leaped into the air in a marvelous grand split. Flying high through the air, he snatched up the baby. His fantastic leap and split was so fast and so high that it carried him over the pond. He looked down to see the hungry crocs with their large jaws wide open. He landed gracefully on the other side, holding the baby safely in his arms.





People all around clapped and cheered, "Hooray for the hero!" Ricardo couldn't believe it. A bulky man with bushy hair ran toward him as he held the baby tightly. "Thank you, thank you, my lad, for saving my baby's life," he cried. "How can I ever repay you? I insist on throwing a party in your honor. Tell all your family and friends to be sure to come. The whole city will be invited! No expense will be spared. I want to properly thank you, my hero!" Just as Ricardo thought things couldn't possibly get any more exciting, he heard someone calling the man with bushy hair "Mr. Mayor."



Had he actually saved the mayor's daughter from the hungry crocodiles? Well, that's what the newspapers said the next day. And that's what the newspeople from the television station said when they interviewed Ricardo. "How did you ever learn to leap so high and so gracefully?" they asked.

Ricardo looked straight into the camera and, speaking into the microphone, replied proudly, "Ballet! I love to dance." From that moment on, the secret was out. But he wasn't embarrassed. Instead, he was quite happy that he no longer had to keep his love of ballet a secret. And no one ever made fun of his love of dance.

Reading a-z

[illegible]

Name _____

INSTRUCTIONS: For each word, write two synonyms (synonyms are two or more words that mean the same, or almost the same thing). When you are finished, write two of your words in a sentence.

big

small

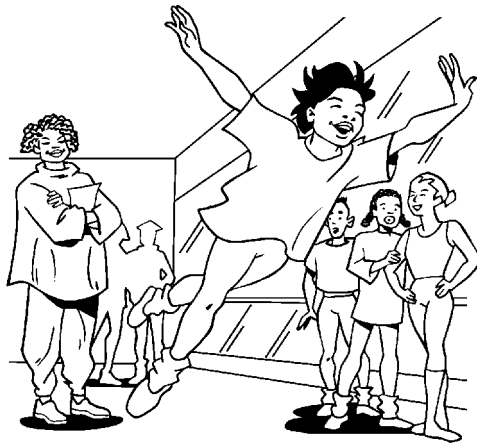
strong

fun

good

nice

hard



My Sentence

Camouflage

A Reading A-Z Level T Leveled Reader

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Chameleon

Introduction

Most animals have enemies. In order to survive, they have to defend themselves. Some animals use speed and strength to survive. Others, like alligators, use their powerful jaws and sharp teeth. Some, like rattlesnakes and black widow spiders, use venom. Others, such as turtles, have hard body coverings. But other animals must rely on the color and pattern of their body covering for survival.

The use of coloring and patterns to **disguise** and **conceal** is called camouflage. Many kinds of animals use camouflage in order to survive. **Predators**—animals that hunt—use it to sneak up on their **prey** without being seen. Prey use it to hide from predators.



The snake's patterns and color can help it hide.

Camouflage comes in many forms. Some animals have permanent color patterns that help them to hide. Others have color patterns that change with the seasons. Still others have color patterns that change with the surface the animal is on. And still others use patterns that change during different stages of life. Let's take a look at different forms of camouflage.



Do You Know?

A polar bear can swim up to 60 miles without resting.

Polar bears blend in with their surroundings.

Blending or Concealing Coloration

Have you heard the joke about the student who turned in a blank sheet of white paper for his art project? His teacher asked him how he could call that art. "It's not a blank sheet of white paper," he replied. "It's a polar bear in a snowstorm." The polar bear is an example of **blending coloration**—its white fur blends in well with its snowy surroundings. This gives the polar bear an advantage when hunting. It is less visible and can sneak up on seals, walruses, and other animals that it hunts.

Blending coloration is quite common in nature. Many desert creatures, including snakes, lizards, and desert foxes, are the color of sand to match their surroundings. Many insects are green to blend in with the plants they live and feed on. Lions match the color of the dry grasslands of the African plains where they live. Other big cats with color patterns, such as leopards, cheetahs, and tigers, blend in with the light and dark of their woodland homes.



This snake's color blends with the rocks.

A special kind of blending can happen when one kind of animal is found living in many different places. Let's look at earless lizards as an example. Earless lizards living on the white sands of New Mexico are white. Other earless lizards that live nearby on black volcanic rock are almost black. Still other earless lizards in nearby desert areas are light yellow to blend well with sand.



Earless lizards





Arctic foxes change color.

Seasonal Blending

Many animals have fur or skin that blends in with their environment. But what do you do when the color of your environment changes? Some animals that live in colder climates change color with the seasons. Arctic hares and Arctic foxes in the far north have brown fur in the summer and white fur in the winter. This helps them to hide year round. If the land around them is white, they're white. If it's dark, they're dark, too.

Arctic birds such as ptarmigans (TAR-mi-gans) and snowy owls also change color with the seasons. Ptarmigans start to grow speckled brown summer coats in the spring. The males stay white longer so that they're more visible to predators. While the predators are busy chasing the more visible male, the female hides in her nest and warms her newly laid eggs.



Ptarmigans in summer and winter



Chameleons can change color.

Color Change

Perhaps one of the best-known examples of color change is the chameleon. Many people believe that chameleons change color to hide. But most chameleons change color to display emotions to other chameleons. However, because many chameleons happen to be green, brown, or gray, they are well hidden in nature.

Do You Know?

Chameleons have the widest range of color of all the color-changing animals. They change color when they are hot, cold, frightened, angry, or in love.

The octopus is also known for its ability to change color. It can change both the color and texture of its skin. When an octopus moves onto a rock, it changes color to match the rock. Its skin becomes bumpy to match the rock's surface.



The octopus blends in with its surroundings.

Crab spiders change color, too. They are able to match the color of white, pink, or yellow flowers. They sit on flowers and are almost invisible until an unsuspecting beetle, fly, or bee comes by for a sip of nectar. The crab spider then attacks it.



This white weasel blends in with the snow.

Camouflage in Young Animals

Some animals have camouflage patterns when they are young, but lose these patterns when they grow big and strong enough to outrun their enemies. When young, their parents must leave them alone for periods of time to go find food. If the young are camouflaged, they are less likely to be eaten by a predator while their parents are away.



Young deer have spots to help them blend in with the leaves.

Camouflage patterns are well known in baby deer. Similar light-colored spotting also occurs in the young of tapirs (a hoofed mammal) and wild boars. Topi antelopes of the African desert blend in with the sand while they are young. When they grow strong enough to flee their enemies, they develop black markings. Even some young predatory animals use camouflage to hide. Lion cubs have spots that help them blend in.

Some animals are even camouflaged before birth. Many animals are at risk of being eaten when they are in the egg stage. Birds that nest on the ground are at great risk for having their eggs stolen when they leave the nest. Oystercatcher eggs are the color of pebbles along the beaches where they live. The eggs of other ground-nesting birds have streaks and **blotches** to break up the egg-shaped outline to help them blend with their surroundings.



Speckled eggs blend in well with the rocks.



Many insects look like plant parts.

Disguise

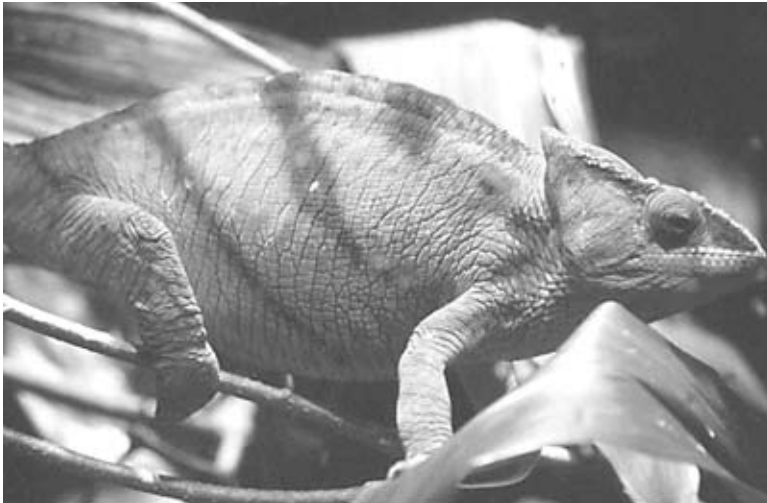
Disguise is another kind of camouflage. A disguised animal looks like another animal or object. Some of the best masters of disguise are leaf insects and stick insects. A leaf insect has wings that look exactly like leaves. Stick insects look so much like sticks that it's almost impossible to tell the insect from the stick that it rests on.

Some insects are the shape and color of flowers. Tropical mantids, of which the praying mantis is one, have bodies that look just like orchids. They are always ready to gobble up an insect that thinks it's about to get a taste of nectar.

Trickery

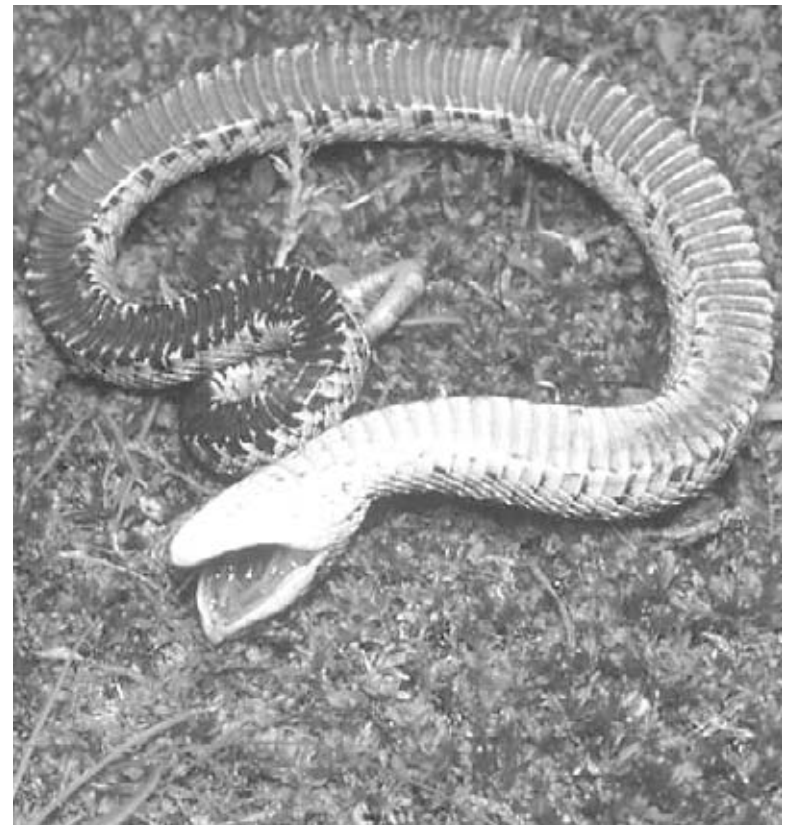
While disguise involves the visible features of an animal, trickery involves behavior. Some animals try to trick or fool other animals by pretending they are dead or by using some other trick.

When frightened, some chameleons lie on the ground without moving. This behavior causes the chameleon to look like a piece of dead wood. Many kinds of small beetles play dead when they are disturbed. They fall to the ground and look like grains of soil, fooling birds who might otherwise eat them.

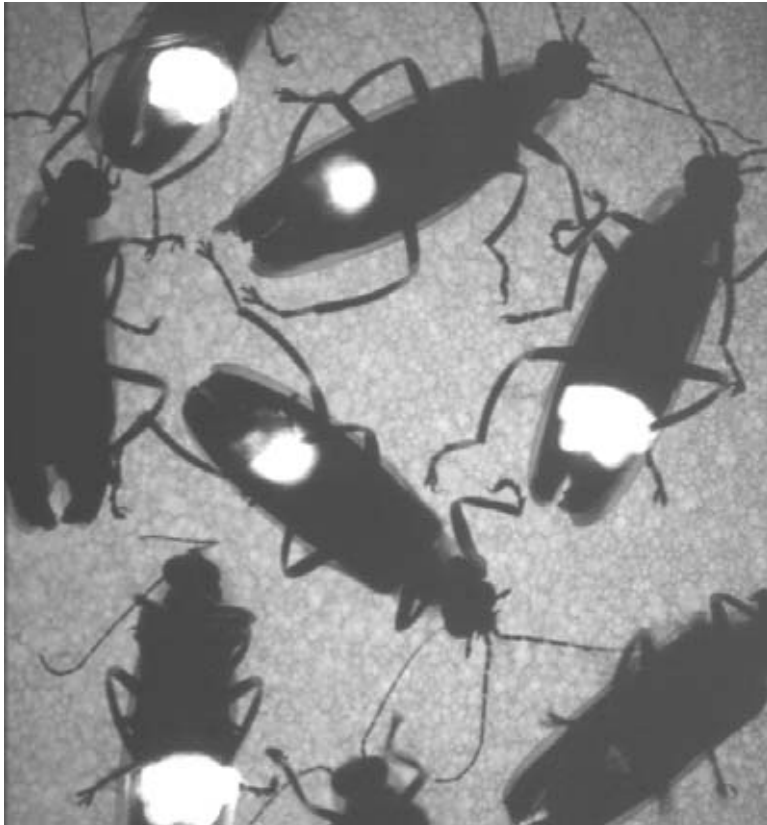


Chameleon

Many predator animals will not eat an animal that is already dead. They prefer to eat only fresh meat. So many prey animals play dead to avoid being eaten. When threatened, a hognose snake turns upside-down and throws back its head, holding its mouth open. It pretends to be dead and tricks its predator into leaving it alone.



A hognose snake playing dead



Fireflies use light to attract mates.

Fireflies are experts at a very clever kind of trickery. When a firefly wants to mate, it flashes its light. Each species of firefly flashes its own kind of signal pattern. Sometimes the female of one species will imitate the signal of another species to trick the males of that species. She flashes the signal of the other species, and when a male arrives, she eats him.

Disruptive Coloration

Another kind of camouflage is called **disruptive coloration**. This kind of camouflage helps to break up an animal's outline and hide its true shape. The stripes of tigers and zebras are two examples of this kind of camouflage. Two African antelopes also have stripes that help break up their outlines. The stripes of all these animals blend in with shadows and make the animals less visible.



Zebras have disruptive coloration.



Io moth with eyespots

Flash Coloration and Other Surprises

Until now, we've been talking about how animals use color and behavior patterns to be less visible. But some animals survive by being *more* visible. Some animals escape predators by startling them. Some do it by making a sudden noise or by baring their teeth. Others **startle** by flashing a bright color at the predator. This is called **flash coloration**.

A related kind of camouflage involves **eyespot**s. Some moths have spots on their wings that look like the eyes of large animals. When the moth flashes its eyespots, this can startle a predator and give the moth an extra second or two to fly away before being eaten.



Poisonous
frog

Warning Coloration

Other animals have bright coloring to warn other animals that they taste bad or are poisonous. The bright colors remind predators of the bad experience they had the last time they tried to eat one of these yucky animals. Fish, frogs, snakes, and many kinds of insects use **warning coloration**.

A few animals survive simply because they look like some other bad tasting or poisonous animal. They disguise themselves using the same colors, just to keep predators away. Some flies and moths survive because they have black and yellow body stripes like stinging wasps and bees. Some also make a buzzing sound like a bee.

A famous example of warning coloration is the monarch butterfly, which is bright orange and black. Monarchs taste so bad that a bird will often vomit after eating one. But the viceroy doesn't taste bad. However, it has developed similar markings to look like the monarch. It is more likely to be left alone by predators since it looks like the foul-tasting monarch.

Viceroy
(right)

Monarch
(below)



Camouflaged eggs

How Did Camouflage Develop?

From one generation of living things to the next, little changes happen in physical traits such as colors and patterns. Sometimes when animals have babies, some of the babies are born with features that give them an advantage toward survival. The difference may give this new animal an advantage. For example, it may be faster or have a color or pattern to better blend with its surroundings. With such an advantage, this animal is more likely to survive to produce its own babies. These babies are likely to also have the same trait and will be more likely to survive.

An animal whose camouflage does not work well will be eaten by a predator. Only animals with the best traits survive to produce **offspring**. Those offspring tend to have the same traits as their parents. In this way, the successful camouflage is passed on from one generation to the next.

This process works for predators as well. Predators with the best traits will be the ones that have regular meals, stay strong, and are more likely to survive and reproduce. Their traits then get passed on to their offspring, who in turn are also more likely to survive and reproduce. Over thousands of years, weak and less protected animals failed to survive. This has allowed animals with the best traits for survival to live on and reproduce.

Polar bear



The rhinoceros does not need camouflage.

Conclusion

Only a few animals have no need for camouflage. These animals may have no natural enemies and eat plant food that cannot escape. The only threat to these animals comes from humans. Land animals such as elephants, rhinoceroses, and hippopotamuses do not need to camouflage themselves from natural enemies. In the ocean, only certain huge whales that eat plankton have no need of camouflage. For other animals, camouflage plays an important role in the struggle to stay alive.

TRY THIS!

Wear neutral-colored clothing for a day. Notice how many people pay attention to you as you do normal activities such as going to school or going to a store. On another day, wear bright red clothing and do similar activities. Notice if you get more attention when you wear bright colors.

TRY THIS!

Go out into nature with a family member. Wear clothing that is only shades of green or brown. Stand in the middle of a wooded area and see if your companion can see you from 20 paces away. Now put on a brightly colored T-shirt you've brought with you. Stand the same distance away and see if your companion sees you.

Glossary

blending coloration	camouflage that helps an animal blend in with its background (p. 6)
blotches	dark patches or stains (p. 15)
conceal	hide (p. 5)
disguise	to pretend to be something different by changing appearances (p. 5)
disruptive coloration	chunky patterns such as blotches or spots that help break up the outline of an animal (p. 20)
eyespot	spots that look like the eyes of a much larger animal (p. 21)
flash coloration	sudden, startling color that helps an animal escape (p. 21)
offspring	descendants (p. 25)
predators	animals that hunt and prey on (eat) other animals (p. 5)
prey	an animal that is eaten by another animal (p. 5)
startle	suddenly scare (p. 21)
warning coloration	colors that tell other animals that an animal tastes bad or is poisonous (p. 22)

Name _____

INSTRUCTIONS: Fill in the chart below with five ways that a chameleon's camouflaging abilities are different from, or similar to, the camouflaging abilities of an Arctic fox. Use complete sentences. When you are finished, write a sentence about which animal you think is more likely to survive and why.



Chameleon



Arctic Fox

1. _____
2. _____
3. _____
4. _____
5. _____

1. _____
2. _____
3. _____
4. _____
5. _____

My Sentence

Name _____

INSTRUCTIONS: Using the book, fill in the missing subject or predicate for each sentence. Next, write two new sentences and draw a line between each one's subject and predicate.

1. _____ believe that chameleons use two different kinds of color changes. (page 11)
2. Most animals _____.
_____. (page 4)
3. _____ have fur or skin that blends in with their environment. (page 9)
4. Many predator animals _____.
_____. (page 18)
5. Crab spiders _____.
_____. (page 12)
6. _____ are well known in baby deer. (page 14)
7. _____ have the widest range of color of all the color-changing animals. (page 11)

My Sentences

1. _____

2. _____

Lighter than Air

A Reading A-Z Level T Leveled Reader

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Level T Leveled Reader
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Illustration by Paula Schricker

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INTRODUCTION

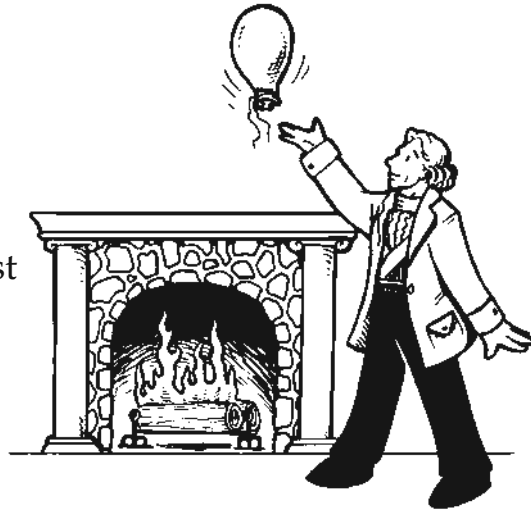
You've probably seen a fire and noticed how smoke rises. You've also probably had a balloon with a string to keep it from floating away. You may have even seen a blimp flying over a stadium. Have you wondered why these things float? It's because they're lighter than air.



Smoke, balloons,
and blimps are all
lighter than air.

EARLY DAYS

More than two centuries ago, a man named Joseph Montgolfier (mon-golf-yay) was watching a fire in his fireplace. He began to wonder what made the smoke and sparks rise up the chimney. He decided the burning fire must create a **gas** of some kind. He called this gas “Montgolfier Gas.” Then he tried an experiment. He made a bag out of silk and held the open bottom over a fire. Sure enough, when he let go, the bag began to rise into the air.



Montgolfier and the silk bag that gave him an idea

Later, Joseph and his brother made a bag of cloth and paper that was nearly 12 meters (40 ft.) around. When they filled it with “Montgolfier Gas” from a large fire, it rose



A drawing of the Montgolfier balloon

over 1,800 meters (6,000 ft.) in the air and traveled more than 1.6 kilometers (1 mi.). In their next demonstration, they attached a basket to the bag and sent a duck, a rooster, and a sheep into the air. These were the very first aircraft passengers in history.

Soon after that, in 1783, two other Frenchmen became the first humans to fly in a balloon. Their flight lasted 25 minutes, and they landed more than eight kilometers (5 mi.) from where they started. When some farmers saw the balloon come down in their field, they were so frightened that they attacked it with pitchforks and tore it to pieces.

KINDS OF BALLOONS

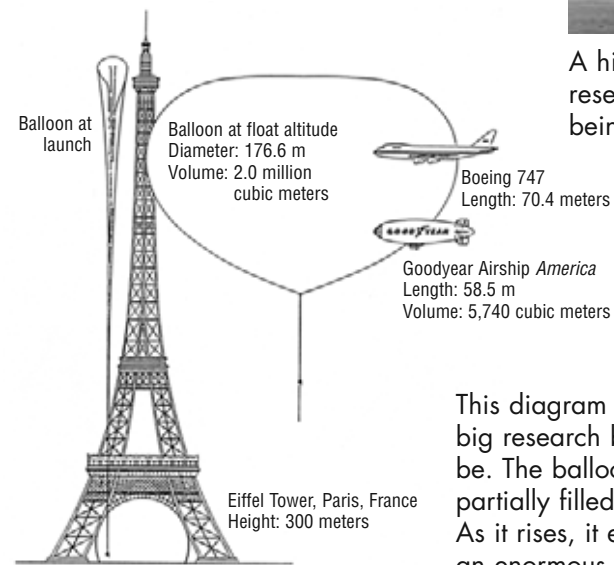
The “silk balloons” mentioned previously were the first hot air balloons. Today, hot air ballooning is a very popular sport all over the world. Today’s balloons are much safer than the ones the Montgolfiers knew. They use propane gas-powered burners to heat the air, and the pilot can adjust the size of the burner’s flame to make the balloon go up and down.



Scientists also use gas-filled balloons to study the weather. Small balloons filled with gases such as helium or hydrogen that are lighter than air carry instruments used to study and predict the weather. Other balloons are much larger and are able to reach altitudes of 37 kilometers (22 mi.) or more, almost to the edge of space. They carry equipment for studying the atmosphere and for observing objects in space.



A high-altitude research balloon being launched



This diagram shows how big research balloons can be. The balloon is only partially filled with helium. As it rises, it expands to an enormous size.

One of the last great challenges of ballooning has been to fly a balloon around the world. Many attempts have been made at this very difficult feat. Bad weather, fuel shortages, and technical problems forced an early end to all of the flights. Many distance and time records were set, but nobody had been able to circle the Earth. Finally, in 1999, Bertran Piccard of Switzerland and Brian Jones of Britain did it.



The Breitling Orbiter, the first balloon to fly around the world

STEERING

One drawback of balloon travel is that balloons can't be steered. They go wherever the wind takes them. Balloon pilots have control over altitude, and they can make the balloon go up and down to find winds blowing in different directions. But they are not able to steer the balloon in a particular direction. Almost as soon as balloons were invented, people started to think of ways to steer them, or make them **dirigible**. Today any lighter-than-air vehicle that can be steered is called a dirigible.



International Ballooning Contest, Aero Park, Chicago, July 4, 1908

A BRIEF HISTORY OF AIRSHIPS

The Zeppelin

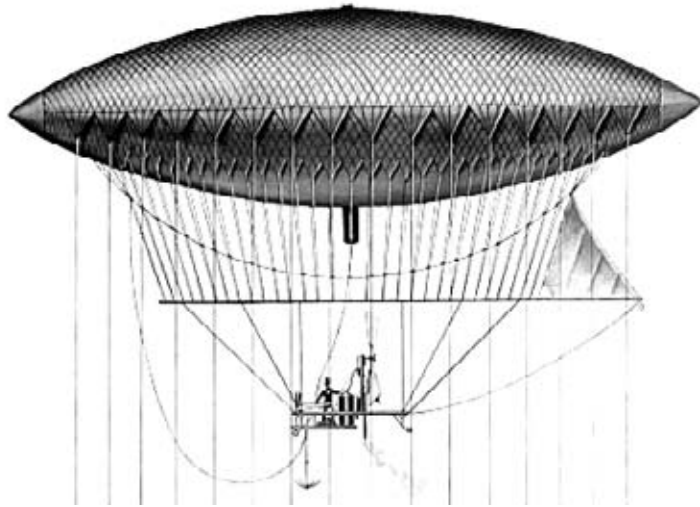
Perhaps the most important person in the history of lighter-than-air flight was Count Ferdinand Graf von Zeppelin. He had long dreamed of a way to navigate the skies the way ships navigate the water.



Count von Zeppelin

Von Zeppelin became convinced that an **airship** with a rigid framework could be made strong enough to be useful. The framework would be covered with fabric and would support the weight of the

engines, fuel, passengers, and cargo. Inside the framework would be cells containing the lifting gas. He chose hydrogen because it is the lightest gas. It was also very explosive, so it had to be used very carefully. He named his invention the **zeppelin**. It was a huge dirigible, often known as a rigid airship.



A drawing of Henri Giffard's dirigible, the first powered aircraft in history

In 1852, a Frenchman named Henri Giffard made the first powered flight in history when he flew his dirigible 27.4 kilometers (17 mi.) and landed safely. His dirigible was powered by a steam engine of his own design. His engine produced three horsepower, about as much as a modern-day lawnmower. But his engine was too weak to fly the dirigible against the wind. Almost 40 years passed before the gasoline engine finally provided the power needed for a useful dirigible.

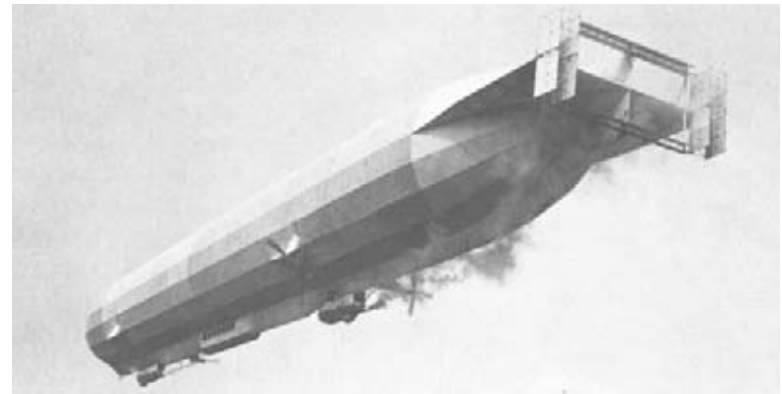
Count von Zeppelin was a military officer who imagined using a fleet of military zeppelins as scouts and bombers. But he failed to interest the military in his invention. Instead he raised money from private donations and spent a large amount from his own fortune. In 1900, the Count flew his first airship, the *Luftschiff Zeppelin 1*, or *LZ 1*. The *LZ 1* made only three flights before the Count ran out of money and had to dismantle it. Five years passed before he could raise money for another ship. Despite its short career, the *LZ 1* proved that the zeppelin could work.



Early zeppelins had hangars that floated on the surface of a lake. This is the *LZ 6*.

The First Airline

Nine years after the *LZ 1*, Count von Zeppelin still had not convinced the military that airships could be useful in war. He realized he would need another source of money if he wanted to build more zeppelins. So in 1909 he formed a company called DELAG to buy airships and carry passengers between German cities. The DELAG airships served delicious food and fine champagne while passengers sat in comfort, watching the countryside below. By 1914, DELAG had carried more than 34,000 passengers and flown roughly 160,000 kilometers (100,000 mi.) without any problems.



The *LZ 10 Schwaben* was the first successful commercial zeppelin. In the summer of 1911, she made almost 100 flights.



The LZ 127 Graf Zeppelin

The Great Graf

In September of 1928, an enormous new airship was pulled from her hangar for the first time. The ship was named *Graf Zeppelin* in honor of the Count, who was still thought of as a national hero in Germany. Nobody had ever seen anything like the *Graf*. She was 236 meters (775 ft.) long, longer than three 747 jetliners and almost as long as the *Titanic*. In 1927, an airplane had struggled to fly across the Atlantic. One year later, the *Graf Zeppelin* could carry 20 passengers across the



The *Graf Zeppelin* attracted crowds wherever she went.

ocean in luxury matched only by the finest ocean liners. The *Graf Zeppelin* caused a huge sensation wherever she went. In the 1920s, many people had never seen an airship or even an airplane. People were awestruck when they saw a silver ship the size of a skyscraper sail over their heads. They rushed out of their houses and gathered by the thousands wherever the *Graf* landed.

The *Graf Zeppelin* made regular passenger flights to and from Germany. In 1929, the *Graf* made a twelve-day voyage around the world. She also helped explore the Arctic and made

the first passenger flights between Europe and South America. The *Graf* flew until 1937. After that, she was made into a museum. But when World War II began, the Nazi government of Germany had her melted down to use the metal to make fighter planes.



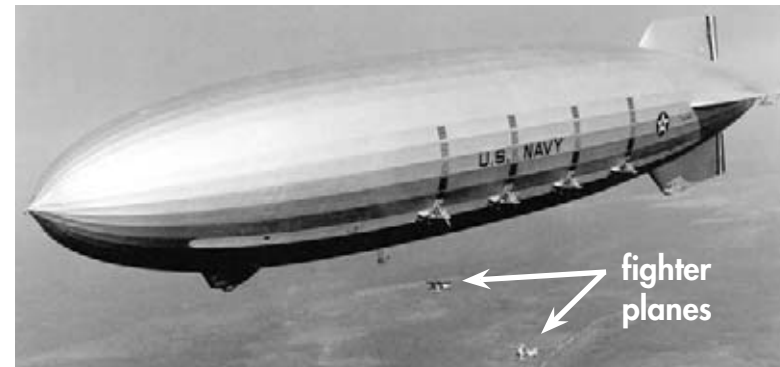
The *Graf Zeppelin* landing at Lakehurst, New Jersey, after her flight around the world in 1929



The U.S. Post Office issued stamps featuring the *Graf Zeppelin* in 1930.

Flying Aircraft Carriers

People are used to the idea of airplanes taking off from and landing on ships called aircraft carriers. But in the 1930s, the U.S. Navy had two aircraft carriers that could fly. The *Akron* and *Macon* were designed to carry several small airplanes that could be launched and recovered in mid-air.



The USS *Macon* with two fighter planes visible underneath

Inside each airship was a hangar where the small planes were stored. A hook on the airplane's wing was attached to a trapeze, which lowered the airplane through an opening in the bottom of the airship. The airplane started its engine, unhooked, and flew off. When the airplane returned, the

procedure was reversed. The pilots became so good at landing in the air that some of the airplanes had their wheels removed to save weight.

Unfortunately, both the *Akron* and *Macon* were lost in accidents caused by bad weather and human error. The Navy lost interest in big zeppelins but continued to fly smaller patrol blimps for many years.

The *Hindenburg*

The *Graf*'s success and popularity inspired the Zeppelin Company to build an even bigger ship. This new ship was the *Hindenburg*. The *Hindenburg* was the most luxurious airship ever built. At 245 meters (803 ft.) long, or nearly three football fields, she is still the largest flying machine ever. The *Hindenburg* began service in 1936, delighting her passengers and thrilling everyone who saw her.

Although she was designed to use helium, the *Hindenburg* was filled with hydrogen. At that time helium was very scarce, and



The LZ 129 *Hindenburg* flies overhead.

the United States was the only country with enough to fill even one airship. The U.S. refused to sell any helium for the *Hindenburg* because of the Nazi government that controlled Germany. Even though her crew was extremely careful about any flames or sparks, the *Hindenburg* burst into flames while landing in stormy weather at Lakehurst, New Jersey, in 1937. Of course, everyone blamed the hydrogen for the explosion. New evidence suggests that the cause was actually the fabric covering, which was also very flammable. No matter what the cause, the fiery crash was the end of passenger-carrying zeppelins.

Modern Airships

After World War II, most people lost interest in big airships. Crossing the ocean on an ocean liner was less expensive, and airplanes were getting bigger and faster. The fiery crash of the *Hindenburg* made people afraid to fly on zeppelins even if they were filled with helium. But people have never lost interest in lighter-than-air flight.

The
Goodyear
blimp
*Spirit of
Goodyear*



Probably the most famous airships of all are the Goodyear **blimps**. In the 1930s, Goodyear teamed up with the Zeppelin Company to build zeppelins and blimps for the U.S. Navy. Goodyear also made some blimps to use for advertising its products and hasn't stopped since. Goodyear blimps

are seen by millions of people every year. Other companies, such as Fuji Film and Metropolitan Life, also use blimps to promote their products.

In Germany, where the zeppelin was invented, interest in new airships is very strong. The Zeppelin Company is once again building airships. Their new ship is the *Zeppelin NT* (New Technology). It is designed for many different uses, including patrol, exploration, advertising, and passenger travel. For the first time in almost 70 years, you can buy a ticket for an airship flight. The company that once flew the *Graf Zeppelin* now offers sightseeing trips over Germany.



Passengers on the *Zeppelin NT* enjoy the view of Lake Constance and Friedrichschafen, Germany, below.



The Zeppelin NT taking off

Another German company, CargoLifter, is working on a huge airship that will be even bigger than the *Hindenburg*. This ship will be used to carry very heavy and bulky cargo. It will be able to pick up its load at the factory and drop it right where it's needed, especially places that do not have decent roads.



Cargo Lifter's CL-160 will be 260 meters (853 feet) long.



The CL-160 will be able to lift up to 160 metric tons.

CONCLUSION

Once people realized that air could be made lighter by heating it and that there were gases lighter than air, they looked for ways to float objects in the air. First it was hot air balloons. Then came dirigibles that could be steered. These airships got bigger and better.

They became dependable, safe means to travel through the air. Dirigibles still fascinate and excite people 150 years after they were invented.

HOW CAN SOMETHING BE LIGHTER THAN AIR?

What the Montgolfier brothers didn't know is that there is no such thing as "Montgolfier Gas." The brothers were not aware of something called **density**. When air is heated by a fire, the air's **molecules** spread apart, making the air less dense. In effect, it becomes lighter than the air around it, and so it rises. If you've ever seen a piece of wood floating in the water, you've seen this happen. The wood floats because it is less dense than the water. A hot air balloon floats because the hot air is less dense than the air around it, and it lifts the balloon (and its passengers) up with it. Some other gases are also less dense than air. People soon discovered that they could also use hydrogen or helium to fill a balloon. Both of these gases are less dense (lighter) than air. Hydrogen can lift more than helium, but it is also very flammable.

GLOSSARY

airship	any self-propelled lighter-than-air aircraft with means to control the direction of flight (p. 12)
blimp	an airship that uses internal gas pressure rather than a rigid framework to maintain its shape (p. 21)
density	how tightly packed together a material's molecules are. Less dense materials float on more dense materials. (p. 25)
dirigible	able to be directed or steered; now refers to any steerable lighter-than-air aircraft (p. 10)
gas	matter that is neither liquid nor solid and expands or contracts rapidly and uniformly with temperature changes (p. 5)
molecules	the tiny particles that make up every substance (p. 25)
zeppelin	an airship with a rigid internal framework and cells to contain the lifting gas (p. 12)

Name _____

INSTRUCTIONS: Answer the following questions in complete sentences.

1. What is a dirigible?



LIGHTER THAN AIR • LEVEL T • 1

2. What was the name of the man who discovered that hot gas floats?

3. Who invented the Zeppelin?

4. Why did people stop taking flights in Zeppelins?

5. Would you ever want to fly in a dirigible?

SKILL: COMPREHENSION

Name _____

INSTRUCTIONS: Circle the correct word(s) in each sentence. Cross out the incorrect word(s).

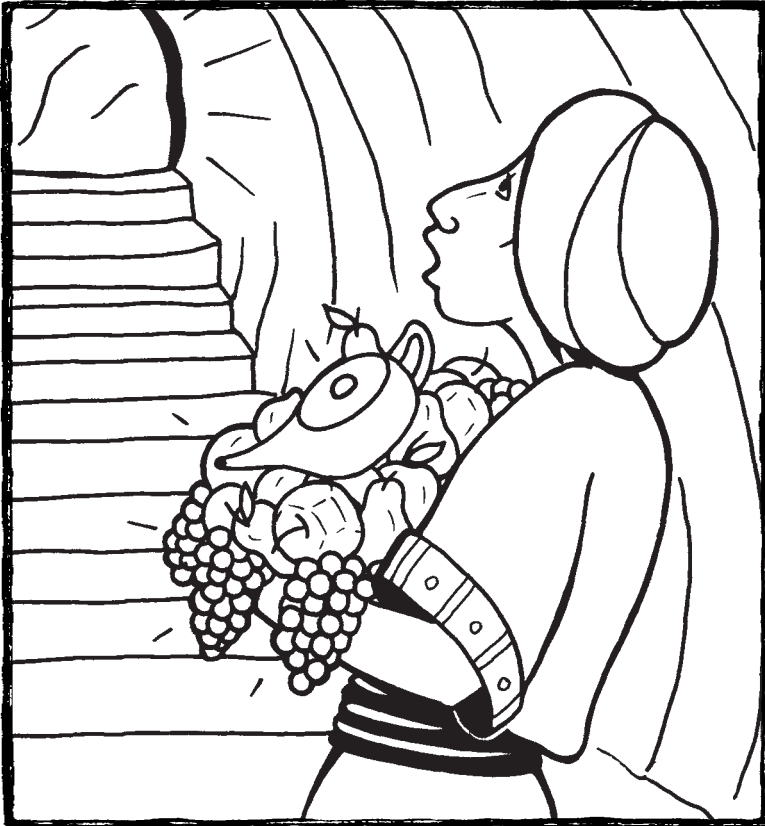
1. Five years **past** / **passed** before he could raise money for another ship.
2. After that she was made **into** / **in to** a museum.
3. The airplane started **its** / **it's** engine, unhooked, and flew off.
4. But his engine was **to** / **too** weak **to** / **too** fly the dirigible against the wind.
5. In **they're** / **there** / **their** next demonstration, they attached a basket to the bag and sent a duck, a rooster, and a sheep into the air.
6. Many distance and time records were set, but nobody had been **able** / **abel** to circle the Earth.
7. He **choose** / **chose** hydrogen because it was the lightest gas.
8. It was also **vary** / **very** explosive, so it had to be used **vary** / **very** carefully.



Aladdin and the Wonderful Lamp

A Reading A-Z Level T Leveled Reader

Word Count: 2,084



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Chapter 1

Aladdin was the son of a poor tailor. His father tried to teach him the **trade**, but the boy was so lazy, he refused to do any work. Because Aladdin never lifted a finger, his father worked himself to exhaustion until he died. But even then, Aladdin would not change his lazy ways and played with the naughty boys in the street while his mother spun cotton.

When Aladdin was fifteen, a magician arrived in the kingdom. The magician wandered through the streets, looking for some foolish boy to trick. When he saw Aladdin, he pounced on him immediately.

"You there, your face looks familiar," he called. "Tell me who your father is."

"My father is Mustapha, the tailor. But he's been dead for two years," Aladdin replied.

"Oh, dear me, it can't be true! I've come all this way to see my brother, Mustapha, only to find out he is dead!" cried the magician. He hugged Aladdin close and pretended to weep. "And you, fine boy, must be my nephew. You've surely taken over your poor father's tailor shop."



"Bah!" said Aladdin. "I can't stand working! I prefer to play in the streets with my friends."

"What? That's no good for a young boy. Let me make you an offer. If you come with me tomorrow, I'll buy a shop and make you a shopkeeper. That way, you can earn money without doing **labor**."

Aladdin liked the sound of that and agreed to follow his false uncle the next day.





Chapter 2

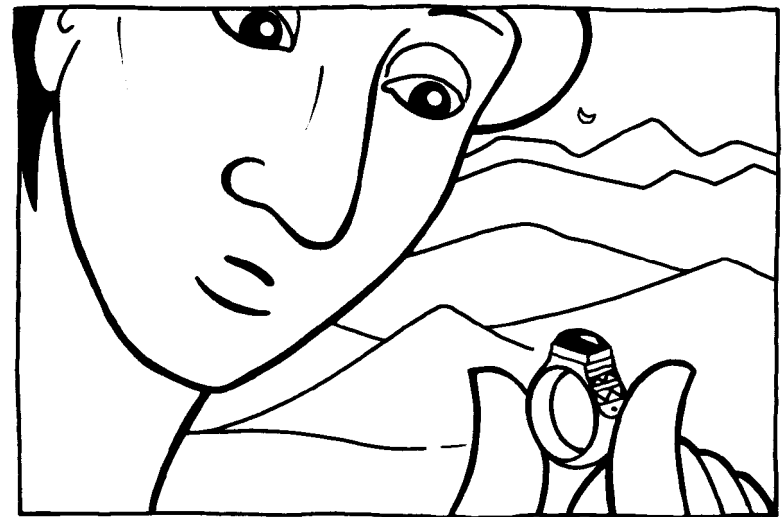
In the morning, the magician led Aladdin out of the city, across the countryside, and into the mountains. Eventually they came to a ledge on the edge of a cliff.

“Uncle, where is my shop? Why are we out here?” Aladdin asked.

“Gather some firewood, boy, and you’ll be thankful you’re here.” So Aladdin gathered wood and built a small fire. The magician sprinkled **incense** over the flames, waved his hands, and murmured mysterious words. Before Aladdin’s eyes, the earth opened up, revealing a stone with a brass ring attached. “Take hold of the ring and lift the stone!” ordered the magician.

Aladdin was quite afraid, for he was sure this was no ordinary uncle. He lifted the stone and saw a passageway leading down stone stairs into the darkness.

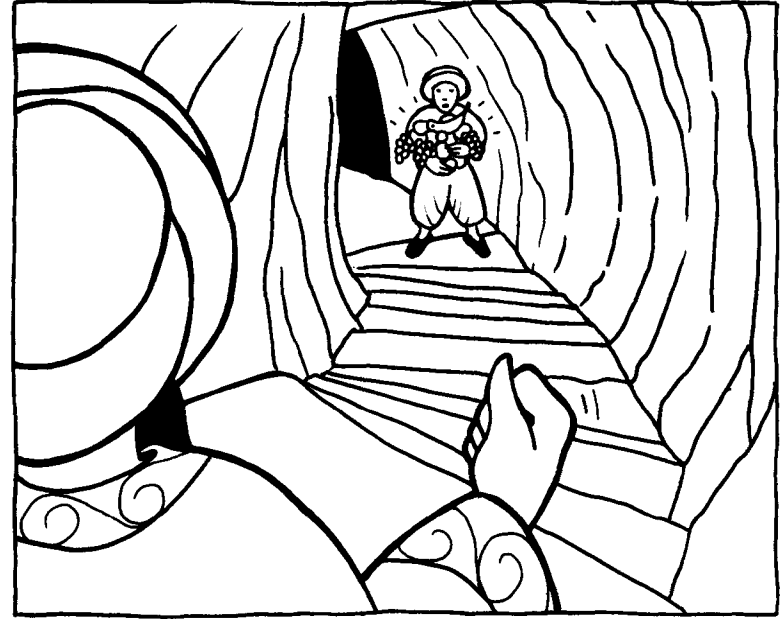
“Now, Nephew, you must do exactly as I say. Go down the stairs and into a golden hall, but do not touch the walls! Even brushing your sleeve against the gold will kill you instantly. At the end of the hall, you will come to a fruit orchard with a path leading to a small lamp sitting on a stone. Blow out the flame, empty the oil, and bring the lamp to me. I’ll give you my ring, which will keep you from harm as long as you **obey** me.”





Aladdin took the ring and went down the stairs, careful not to touch the golden walls of the beautiful hall. At the end of the hall, he entered a bright orchard with fruit trees bearing the most colorful, delicious fruit Aladdin had ever seen.

He could not resist plucking a bright red apple. As soon as he took it from the tree, the apple changed into a solid ruby! At the next tree, he plucked a bunch of golden grapes, which changed to a cluster of pearls. Lemons turned to diamonds, and limes to emeralds.



Aladdin gathered as much fruit as he could before following the path to the lamp. He piled the lamp on top of the treasure in his arms and returned to the stairs where his uncle waited.

“Uncle, my load is heavy; help me up,” he said.

“First give me the lamp!” demanded the magician.

“I told you, Uncle, my hands are full. I cannot give you anything until you help me.”

"Foolish boy! Give me the lamp or stay down there forever!" The magician knew the lamp's magic would not work if he took it from someone by force.

"But Uncle!" protested Aladdin. Before he could finish, the magician muttered more magic words, and SLAM! the stone flew shut, locking Aladdin inside the cavern.



Aladdin called and called, but his uncle would not answer. Finally he decided to pray, but when he put his hands together, he accidentally rubbed the magician's ring. Instantly, a frightful genie stood before him. "What would you have? I am the slave of whoever wears the ring."

Aladdin was terrified, but he immediately replied, "Bring me home!" In no time, he stood at his front door, his worried mother weeping with joy to see him. Aladdin was starving, and he begged his mother to sell one of the treasures—the dusty lamp, perhaps—for food.

His mother began to polish the lamp with an old rag, and another enormous genie appeared. "What would you have? I am the slave of whoever owns the lamp."

His mother was terrified, but Aladdin knew what to do. "Bring us a satisfying feast!" he shouted. In an instant, the genie brought dozens of solid silver trays overflowing with food. Buttery rolls, **delectable** pastries, and steaming roasts filled their table. When Aladdin and his mother finished, enough food still remained for many days. They would never be hungry again. When the food ran out, they sold a piece of beautiful silverware or one of the trays for more.



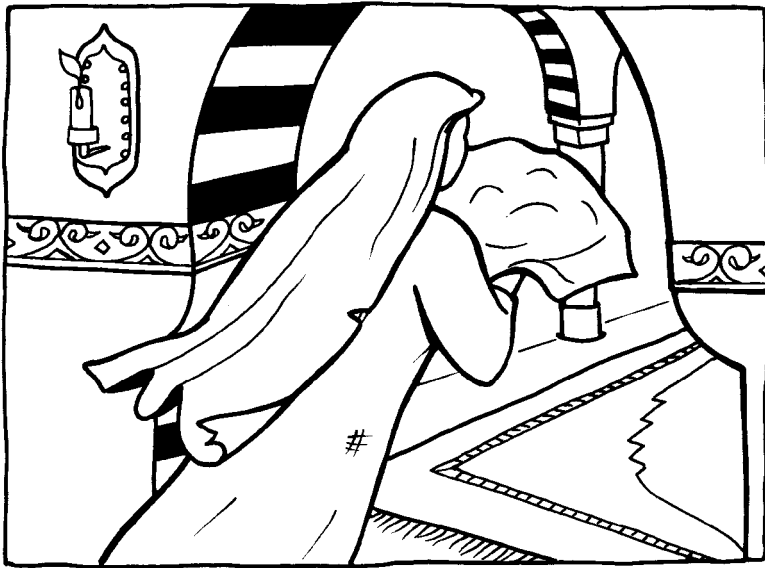
Chapter 3

They would have lived like this forever if Aladdin had not been on the street when he heard the town crier shouting, "Back to your houses, all! **Shutter** your windows! Princess Buddir will go to the bath!" No one was allowed to see the Sultan's daughter without her veil. Aladdin hid himself behind the wall of the bathhouse, eager to see the princess's face. When she came by with her servants, Aladdin was so struck by her beauty, he vowed he would marry her.

"Have you lost your senses?" cried his mother when he told her his plans.

"Only my heart," Aladdin replied. "Take this silver tray from our meal and load it with fruit from the cavern. Wrap it carefully in rags and take it to the Sultan to ask for his daughter's hand in marriage."

Though she grumbled that a tailor's wife would never be allowed to see the Sultan, Aladdin's mother piled the tray with gleaming jewels and wrapped it in rags. The Sultan's guards would have thrown her out, but the Sultan was curious as to what was hidden inside the bundle. He ordered Aladdin's mother into his hall.



Aladdin's mother bowed low, holding up the rag bundle, which was scarcely distinguishable from her clothing. "Sultan, my son begs for your daughter's hand in marriage."

The Sultan burst out laughing. "Even if I allowed it, my daughter would be insulted to live with someone as poor as your son. But before I toss you out, unwrap your bundle and show me what you have brought."

Aladdin's mother unwrapped the package, and the enormous jewels glittered in the sunlit hall. The Sultan's jaw fell open as he admired a gold pear, for he had never seen such treasures.



"I am very impressed. Perhaps your son is worthy after all. But before I allow my daughter to marry him, he must truly prove his worth. Tell him he has seven days to deliver forty trays of these same gems. Each tray must be solid gold. Each gold tray must be carried by two slaves, and each slave must be dressed in the richest clothing."

Aladdin's mother went back to her son and told him what the Sultan had said. Aladdin laughed, for the power of the lamp could get him anything. Instantly, the genie produced a train of eighty slaves carrying trays of gold and jewels. A crowd gathered to watch them march to the Sultan's palace behind Aladdin's ragged mother.



"Again, you have impressed me," the Sultan said. "But I must know that he will keep my daughter happy. Tell your son to have a splendid palace ready for her by the end of the week."

In a flash, Aladdin ordered the genie to build a magnificent palace in the garden across from the Sultan's window. The genie even ran a soft red carpet from the door of Aladdin's palace to the door of the Sultan's. Aladdin himself, dressed in the finest silk, rode to the Sultan's door on a horse more beautiful than any in the Sultan's stables.

"It would be unfair to my daughter if I did not allow her to marry such a worthy man," said the Sultan.





And so it was that Aladdin and the princess were married. All the kingdom came to the wedding **procession**. Musicians led the Princess Buddir down the carpet toward Aladdin's palace, and four hundred torches lit the street as bright as day. Inside Aladdin's palace, they ate a **sumptuous** feast on solid silver plates. It was the most joyful occasion the kingdom could remember, and Aladdin and Buddir had happiness for many years.



Chapter 4

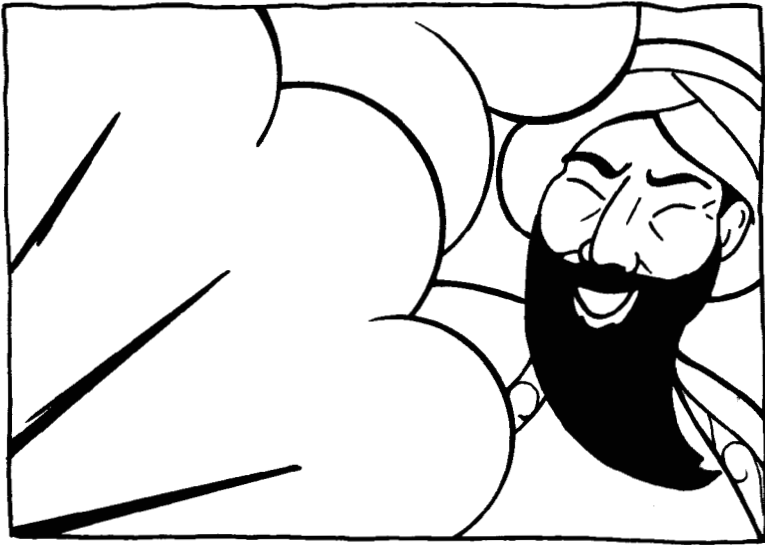
They would have lived like this forever, but Aladdin loved riding among the streets of the city throwing gold to everyone he met. This made him quite famous. Soon, the magician heard of this boy who seemed to have riches as if by magic. He knew Aladdin had stolen his ring and lamp to gain his wealth.

The magician disguised himself as a **peddler**, filled a basket with shiny lamps, and came to the palace door while Aladdin was out. "Who will exchange old lamps for new ones?" he called. Buddir peeked out the window.

"Won't Aladdin be surprised when he finds a shiny new lamp instead of that dull one he keeps in his chamber?" She took the magic lamp from Aladdin's room and brought it to the peddler. Immediately, the magician rubbed the lamp and **summoned** the genie.

"What would you have? I am the slave of whoever owns the lamp."

"Take this princess and her palace and servants and send us all to Africa!" the magician cried. With a flash, the palace vanished.



When the Sultan looked out his window, he gasped in horror. His daughter's palace had vanished in a puff of smoke! He ordered that Aladdin be brought before him.

The Sultan raged. "Whatever **sorcery** you used to produce your riches has made my daughter disappear! If you cannot bring her back in five days, I'll chop off your head!"

Aladdin pleaded his innocence, but the Sultan would hear none of it. Sadder than he had ever been, Aladdin wandered the city for three days. He asked everyone if they had seen his princess. On the fourth day, he decided to pray, and he rubbed the magic ring, which he had almost forgotten about.

"What would you have? I am the slave of whoever wears the ring."

"Please, return my palace as it was!"

"Only the Genie of the Lamp can undo what the Genie of the Lamp has done," the genie answered.

"Then take me to my palace," Aladdin said. Before he could blink, Aladdin stood at the front door of his palace, which now sat in a lonely desert in Africa. He snuck inside and reunited with his Princess Buddir, and they both shed tears of joy.

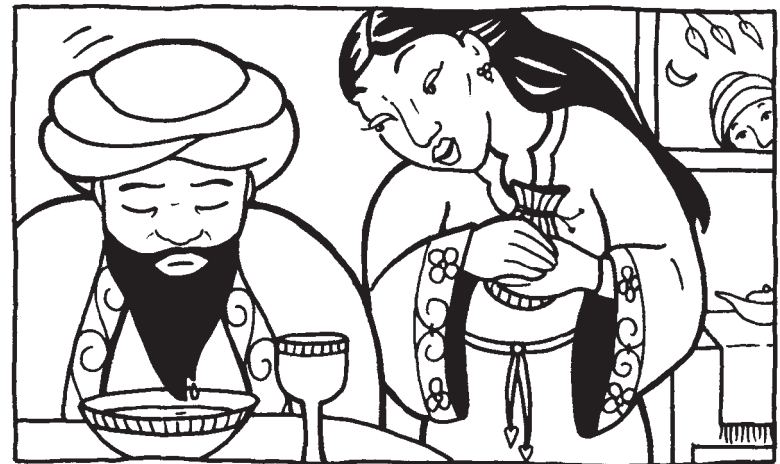


"I have a plan to get our lamp back," whispered Aladdin. He gave Buddir a pouch filled with a potion that made its victims slow and sleepy.

Buddir then invited the magician to eat with her. **Flattered** by her sudden kindness, the magician allowed the princess to pour his drink. She secretly added the powder, and soon the magician was nodding in his soup.

"My dear," said Buddir, "doesn't it seem awfully dark in here?"

The magician's eyelids were half-closed, so it did seem dark to him. "Why yes, it does," he mumbled.





“Why don’t you give me that old lamp you carry around, so we may dine by its flame?” The magician, numbed by the potion, handed her the magic lamp. She summoned the genie immediately.

“Take me and Aladdin and my palace back to the Sultan’s kingdom, and leave this horrid magician in the desert where he will never find his way out!” she ordered. The genie did as she asked, and they were all returned to their home safe and sound.

The Sultan was so pleased to see his daughter again, he made Aladdin the heir to his throne. After the Sultan passed on the crown, Aladdin and Buddir ruled the kingdom for many happy years.

Glossary

delectable	delicious; tasty (p. 13)
flattered	impressed and pleased by another person’s praise (p. 24)
incense	substance that releases a pleasant smell when burned (p. 7)
labor	difficult physical work (p. 6)
obey	follow all the rules; to carry out all the instructions (p. 8)
peddler	a traveling salesman who sells and trades many kinds of objects (p. 20)
procession	train of people; a formal parade (p. 19)
shutter	to cover a window with wooden shutters (p. 14)
sorcery	magic (p. 22)
summoned	called something or someone to you; invited (p. 21)
sumptuous	rich and delicious (p. 19)
trade	profession; skill; job (p. 4)

Name _____

INSTRUCTIONS: Use the events in the story to support the statements.

Statement	Events in the Story	Page
Aladdin doesn't like to work.		
Aladdin and his mother are poor.		
Aladdin is very trusting.		
The magician is greedy.		
Aladdin's mother loves him.		
Aladdin likes Princess Buddir.		
The Sultan loves his daughter.		
Aladdin is generous.		
Aladdin is smart.		
Princess Buddir is kind.		

Name _____

INSTRUCTIONS: Add the correct suffix to the root word to complete the sentence.

-ful full of	-ness state of being
-----------------	-------------------------

1. Sara was _____ when she found her lost cat.
(full of joy)

2. _____ filled the room as the sun went down.
(state of being dark)

3. Please be _____ when you cross the street.
(full of care)

4. George was filled with _____ when he did well.
(state of being happy)

5. Tom's sprained ankle was _____.
(full of pain)

6. The painting was _____.
(full of beauty)

7. Sharing with a friend shows your _____.
(state of being kind)

8. The _____ of the flowers filled the air.
(state of being sweet)

Yee Haw! The Real Lives of the Cowboys

A Reading A-Z Level T Leveled Reader

Word Count: 1,795



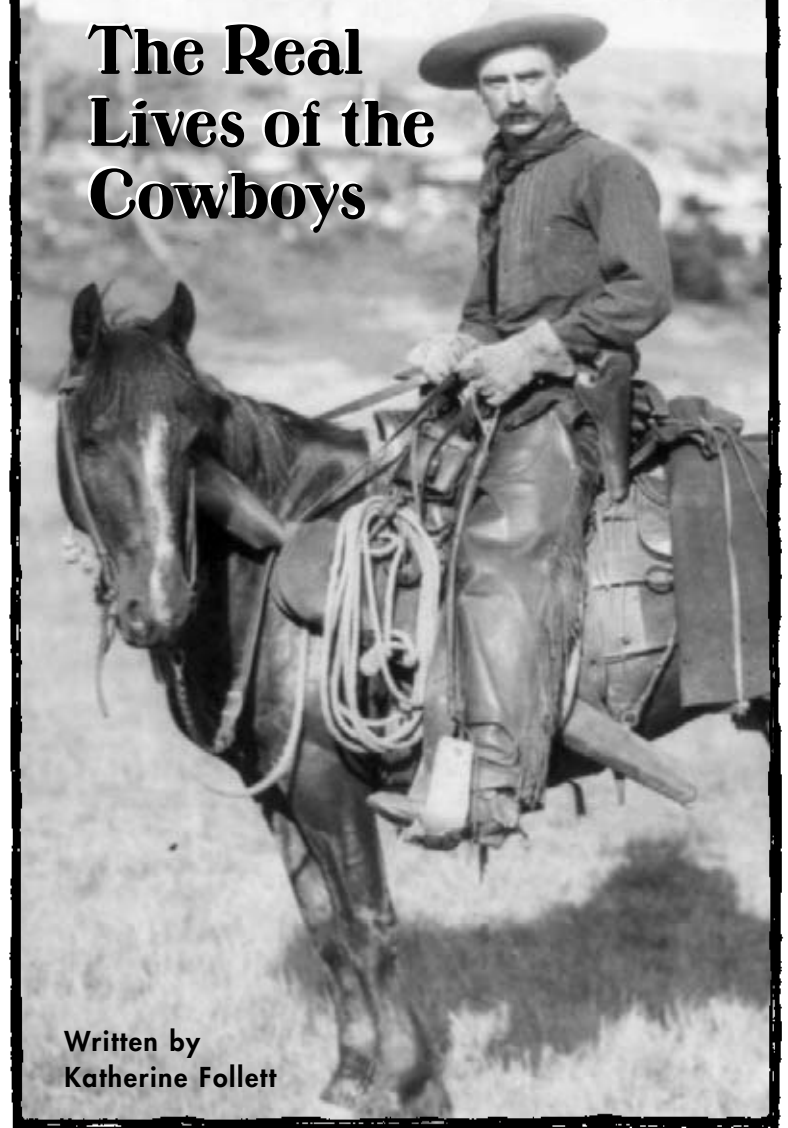
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YEE HAW!

The Real
Lives of the
Cowboys



Written by
Katherine Follett

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YEE HAW!

The Real Lives of the Cowboys



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A note on terminology:

In this book, the word cow is used as a general term to indicate a cow, steer, bull, or calf, rather than just a female cow. The term, invented by the cowboys, is used for the sake of style and brevity.

Front cover: The cowboy's image remains famous today.

Back cover: African-Americans were also cowboys.

Title page: Lunch on the drive

Yee Haw! The Real Lives of the Cowboys

Level T Leveled Reader

© 2003 Learning Page, Inc.

Written by Katherine Follett

Illustrations by Cende Hill

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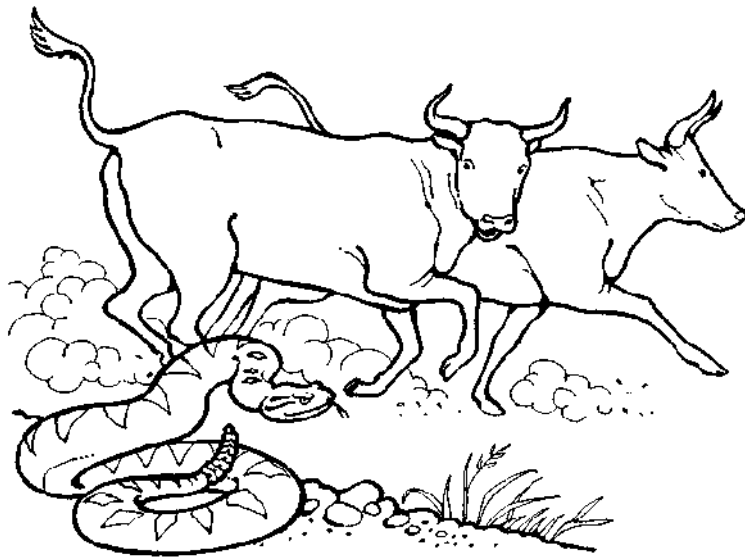
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Introduction

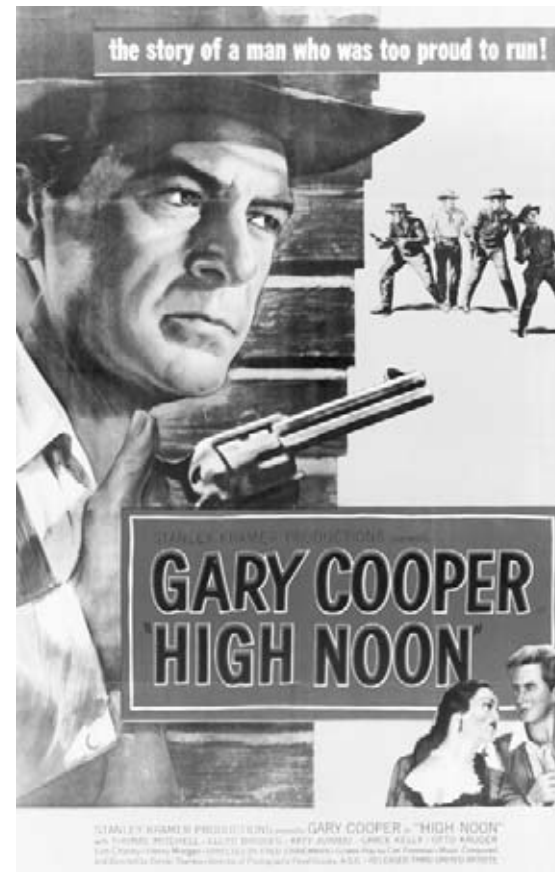
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Mention the word *cowboy*, and a picture quickly comes to mind: a tough man in boots and a hat who is fast with his gun. While this romantic image is known around the world, the real cowboys were very different. Cowboys didn't spend their time rescuing maidens or getting in shootouts. They were

workers who performed a tough, dangerous, and exhausting job. It was this difficult, lonely work that first made cowboys **icons** of the American West.



Movie cowboys were romantic, gun-slinging heroes.

The Cowboy Era Begins

In the 1860s, enormous cattle ranches spread over large areas of western North America. Since so few people lived on the huge plains of

Texas, Wyoming, Utah, and Montana, ranchers let their cattle wander over the land.

The cows grew fat and healthy on the wild grass. But most of the major **slaughterhouses** and cattle markets were in northern and eastern cities.

The ranchers needed some way to round up thousands of cows and take them to railroad stations to get them to market. Before the railroad spread to the western states, the only way to do this was on horseback.



This poster shows how cheap and plentiful western land was.

At the same time, many young men had lost their jobs. The U.S. Civil War left soldiers and freed slaves with few opportunities. People of Mexican descent and Native Americans were forced west as settlers moved in. Many of these out-of-work young men went to the western ranches. There was plenty of land and lots of work to be done there.

Ranchers hired strong men and taught them to handle horses. They sent them onto the range to round up the cattle and march them to railroad stations on the northern and eastern plains. Leading these **cattle drives** was the original work of cowboys. More than one-quarter of American cowboys were Hispanic, Native American, or African-American.



Native Americans were skilled horse handlers.

The first cowboys were Mexicans who called themselves **vaqueros** (vah-KEHR-ohs). They were experienced horse handlers who taught the newcomers how to work with cattle and horses. They invented much of the familiar equipment and clothing that cowboys used, including the lasso, the cowboy hat (a form of the sombrero), and leather **chaps**. Chaps are leg coverings that protected cowboys from cactuses and other spiny plants. The vaqueros were often the ones who captured and tamed **mustangs**, or wild horses, for other cowboys to ride. Mustangs were nearly impossible to control until after the skilled vaqueros had tamed them. The vaqueros trained both cowboys and horses for the **grueling** cattle drive.

Do You Know?

Many cowboy terms come from Spanish words invented by the vaqueros. Some common examples are:

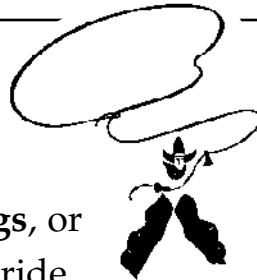
Chaps from the Spanish word *chaparejos*

Rodeo from the Spanish word meaning "to surround"

Lariat a cowboy's rope, from the Spanish word *la reata*

Mustang from the Spanish word *mustaños*

Buckaroo a form of the word *vaquero*



The Cattle Drive

The Roundup

The cowboys' first task was to go out from the ranch house and gather all the cattle for the drive. The ranchers had **branded** their cattle, or burned a pattern into their skin, so they could tell whose cow was whose. This was necessary because the cattle were scattered over miles and mixed in with other herds. The cowboys herded the cattle onto the ranch, sorted them, branded any new calves, and prepared for the long trek ahead.



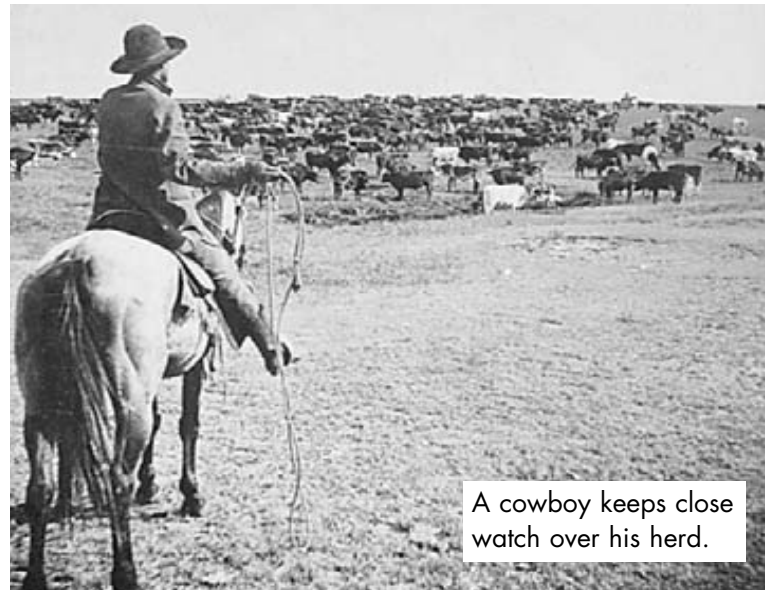
Branding was an uncomfortable event for both cow and cowboy.



Cowboys prepare to leave the ranch.

On the Trail

About 2,500 cattle and 15 to 20 cowboys went on a typical cattle drive. This included the trail boss, who was the highest-paid member of the crew. The trail boss was the leader of the drive. He was responsible for deciding the price of the cattle at the railroad station. The cook, who often served as the drive's doctor, drove a **chuck wagon** filled with food, supplies, medicine, and other goods. Even though he did not handle cows or horses, the cook was a highly respected member of the crew. He was often African-American. A **wrangler**, usually a teenage boy, kept track of the extra horses. Cowboys needed to switch horses when the horses became tired, sick, or hurt.



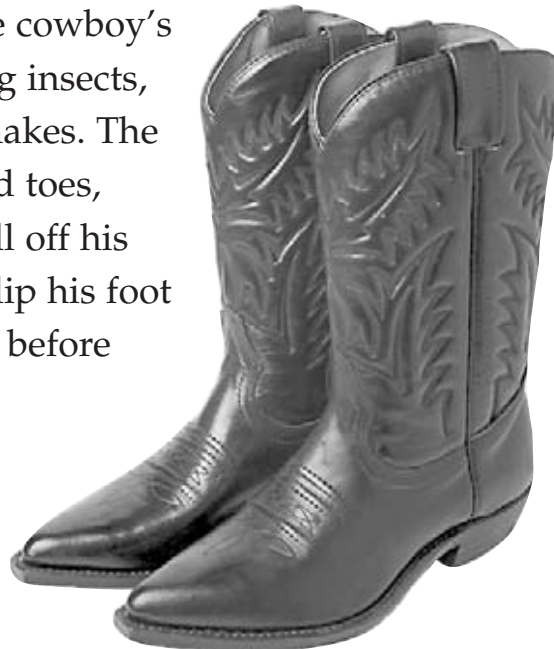
A cowboy keeps close watch over his herd.

For the first few days, the cowboys drove the cattle hard, trying to get them away from familiar land. The cattle were not used to being in a large group, and they tried to run back to their old pastures. But after a few days, the pace relaxed. Cows were sold by the pound, and going too fast would make them lose weight. New cowboys, or greenhorns, rode in the back. This was the worst place to be. The cows kicked up lots of dust and left piles of smelly **dung** behind. Bandanas came in handy keeping dust and bad smells away from the cowboy's mouth and nose.

The trail boss and the cook rode ahead of the herd, searching for the next night's campsite. In the dry west, water sources were very important. The cook and trail boss had to be excellent **navigators** in order to find them. The cook set up camp and began dinner while the cattle followed behind. In a day's ride, the group could travel 15 to 20 miles (24–32 km.). Cowboys often rode 16 hours a day through rain, storms, and terrible heat.

The cowboys' hats kept sun and rain off their faces. Tough cowboy boots sat comfortably in the stirrups and protected the cowboy's ankles from biting insects, scorpions, and snakes. The boots had pointed toes, so if a cowboy fell off his horse, he could slip his foot out of the stirrup before he was trampled.

Cowboy boots have heels to rest in the stirrups and straps to help pull them on.



At night, at least two cowboys always stood guard. They even ate dinner in shifts so that someone could always watch the cattle. Guards rode their horses around the herd, making sure no cows ran away. They watched for wild animals, such as wolves or coyotes, and for any human thieves or attackers. They often sang quiet, lonesome songs under the stars in order to keep the cows calm. The last late-night watch would wake the cook, who would begin breakfast, and the drive would move again.



Try This!

Sing a cowboy song! All you need is a lonely place under the stars. This cowboy song is about an old cowboy who misses his job on the trail.

*Thunder of hoofs on the range as you ride,
Hissing of iron and sizzling of hide,
Bellows of cattle and snorts of cayuse,
Longhorns from Texas as wild as the deuce,
Midnight stampedes and milling of herds,
Yells of the cow-men too angry for words,
Right in the thick of it all would I stay.
Make me a cowboy again for a day!*





Cowboys eat a meal around the chuck wagon.

Cowboy food wasn't much to crow about; any supplies had to be cheap and **nonperishable**. The most common foods were beans, hotcakes and biscuits (which the cook made fresh daily), canned fruit, bacon, and strong coffee. Since the cowboys were exercising all day, they ate quite a lot and kept the cook busy. The cook often hunted and fished to add to the cowboys' diet.



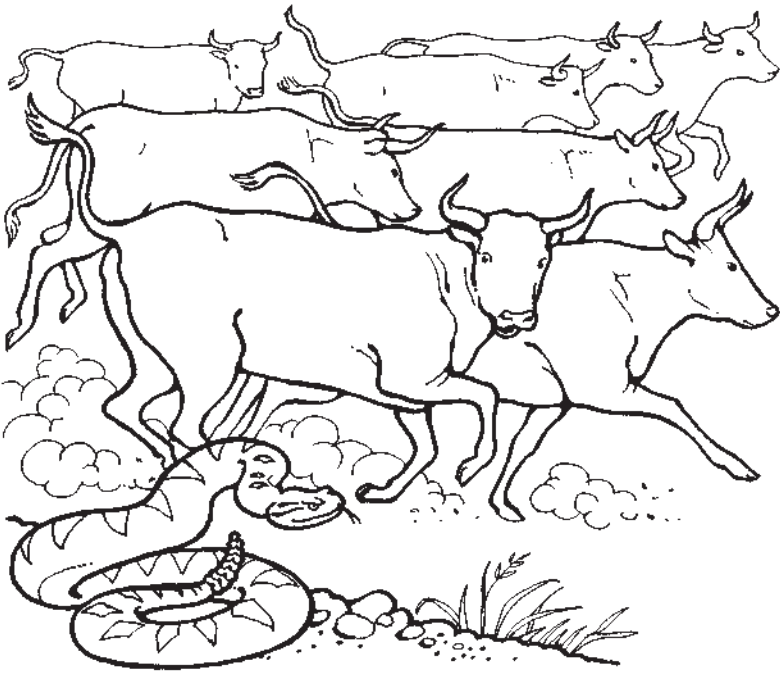
Most cowboys relaxed in saloons after a cattle drive.

The Market

A cattle drive usually lasted two to three months, seven days a week. At the end of the drive, the cowboys led the cattle through the streets of a railroad town and loaded them on trains bound north and east. Afterward, the cowboys got much-needed baths and haircuts. They relaxed in saloons, dance halls, and theaters, and bought more supplies before heading home. The ride back often went much faster than the drive. The cowboys could get good nights' sleep under the stars and spend their extra time hunting and fishing. Once back in ranch land, they would begin looking to get hired on the next drive.

Stampede! And Other Dangers

Cows are herd animals, which means they travel in large groups for protection. Wild herd animals, such as buffalo and wildebeest, have one defense against predators and other dangers: the **stampede**. As a group, they run at top speed, trampling everything in their path in hopes of outrunning, hurting, or confusing their predators. Stampedes were a cowboy's biggest fear.



While on the trail, the cows were nervous and stressed. A rattlesnake, lightning, or any sudden loud noise could startle the cattle and cause a stampede. Thousands of cattle would run forward at once. The cows moved so quickly that they often hurt or killed themselves by falling off cliffs, drowning in rivers, or catching their legs in holes. Often, stampedes happened at night when the cowboys couldn't see the cows or any dangers they might run into. The only way to stop a stampede was by **circling** the cattle.

Do You Know?

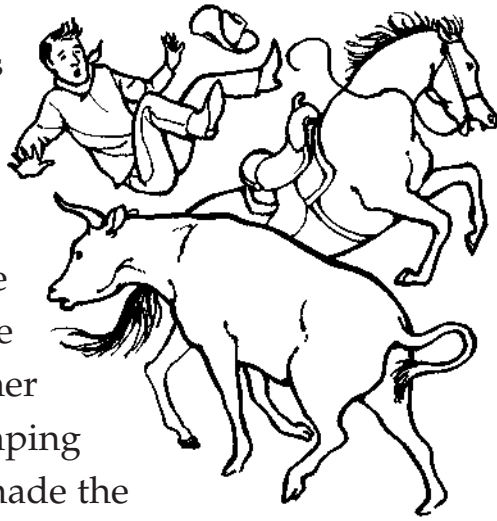
Native Americans often owned their own cattle ranches. During the time of the cowboys, all of what is now Oklahoma was American Indian territory. The Native Americans didn't like having someone else's cattle feeding on grass that should

have been for their own cows. If the cattle

drives wished to cross their land, the Native Americans charged a toll of ten cents for each cow. Sometimes, if the trail boss refused to pay, the Native Americans might sneak up on the drive during the night and start a stampede.



The most experienced cowboys would leap on the strongest, fastest horses. They would ride closely alongside the herd and force the cows to crowd together by shouting and bumping against them. They made the cows on the outside run in a circle, and the cows on the inside would follow. Once they were running in a circle, the cattle would eventually get tired and stop.



This was not an easy task. A cow could knock a cowboy off his horse and trample or gore him. The horse itself could get scared and run off. If stampedes happened at night, the cowboys' horses were vulnerable to the same cliffs, rivers, and holes as the cattle were. And sometimes, the cows refused to go into a circle. Instead, they ran off in all directions. The cattle drive was forced to wait while the cowboys rode across the wilderness, gathering up every stray cow.

River crossings were also dangerous. Cows could drown or become caught in deep sand. Rattlesnakes and scorpions threatened the lives of both cattle and cowboys. The cowboys were miles from any hospital to treat injuries and infections. Cattle and horse **rustlers** were a common and hated danger of the drive. The West also had dangerous weather, including flash floods, tornadoes, and lightning. Cowboys even developed a superstition about lightning striking white horses. The western U.S. can also become harshly cold, even in the summertime. Records show that many cowboys died of pneumonia and hypothermia.



When a cowboy died on the trail, his companions held a funeral on the plains.



As the railroad expanded westward, ranchers no longer needed to drive their cattle.

The End of the Era

Though cowboys became famous for their bravery, the need for cattle drives didn't last long. The railroad expanded rapidly. Eventually, the trains came to Texas, Colorado, and other ranch states. Ranchers no longer needed to drive their cattle hundreds of miles to distant stations. After the invention of barbed wire, ranchers also began fencing in their land. Rounding up cows was no longer necessary. Even if the cowboys wanted to continue the cattle drives, the fences would block their way.



Do You Know?

Texas cattle in the 1860s were an especially mean breed called Texas longhorns. Their huge horns could span nine feet (2.7 m). During the Civil War when ranchers were away, the cows had run wild. Some of the longhorns had never seen a human being before, and they often attacked and killed cowboys and their horses.

While longhorns were mean, they weren't very tough when it came to disease or weather.

Longhorns carried a disease called "Texas fever" that could spread to other cattle. An extremely harsh winter in 1886 froze thousands of longhorns to death. This tragedy was one of the things that helped end the cowboy era.



But the cowboy life was far from over. Just as real cowboys were finding themselves out of work, Buffalo Bill Cody began his Wild West show. Cowboys were hired to show their riding and roping skills to crowds across the United States and in Europe. Annie Oakley, one of the most famous cowgirls, was a star of the Wild West show. It was this show that really created the legend of the American cowboy. The show included plays and acts that portrayed cowboys as rough-and-tough gunslingers, even though few had carried guns in real life. They made cowboy fashion, including jeans, vests, hats, and boots, popular with people throughout the world.

Annie Oakley could shoot a cigarette out of someone's mouth.



Modern rodeos keep cowboy skills and traditions alive.

Long after the American West became settled, Western movies exploded in popularity. During the 1950s and 1960s, cowboy movies, television shows, toys, and games were everywhere. *The Lone Ranger* and *Bonanza* became popular TV shows. Children played “cowboys and Indians” in schoolyards, even though in the real West, Native Americans often *were* cowboys. Today, you can see cowboy boots and hats in Tokyo and Paris as well as Texas. The cowboy has become little more than an image used to sell jeans, trucks, and cigarettes. But that image wouldn't exist without the hard work and bravery of the real cowboys of the North American West.

Glossary

branded	burned a pattern into the skin with a hot iron (p. 8)
cattle drives	the roundup and guiding of cattle from the ranch to the railroad station (p. 6)
chaps	protective leather leg coverings (p. 7)
chuck wagon	wagon carrying food, cooking equipment, and supplies (p. 9)
circling	stopping a stampede by forcing cattle to run in a circle (p. 16)
dung	poop (p. 10)
grueling	very difficult; exhausting (p. 7)
icons	important symbols (p. 4)
mustangs	wild horses (p. 7)

navigator	person who chooses and finds a route on a trip (p. 11)
nonperishable	will not rot or spoil; needs no refrigeration (p. 13)
slaughterhouses	factories where livestock is killed and processed into meat (p. 5)
stampede	when cattle or other herd animals panic and, as a group, run top speed (p. 15)
rustlers	thieves, especially of animals (p. 18)
vaqueros	Mexican cowboys and horse handlers who invented much of the clothing, equipment, and techniques the cowboys used (p. 7)
wrangler	person on a cattle drive who kept track of extra horses (p. 9)

Name _____

INSTRUCTIONS: Using a pencil, place the vocabulary words from the box in the sentences where you think they belong. After you read the book, look back and move the words around, if you need to.

branded	cattle drive	chaps	chuck wagon
circling	mustangs	nonperishable	slaughterhouses
stampede	rustlers	vaqueros	wranglers

1. Cowboys could only stop a stampede by _____ the cattle.
2. Horse _____ kept track of the extra horses on the trail.
3. Cowboys kept a close watch for _____ sneaking in during the night.
4. The _____ trained new cowboys on how to handle horses.
5. A cowboy's main job was to guide cows on a _____.
6. The cows had to ride trains to _____ in northern and eastern cities.
7. Wild _____ were almost impossible to tame.
8. The _____ stored extra food and medicine.
9. _____ helped protect cowboys' legs from thorns.
10. All of the cows were _____ to tell them apart.
11. Foods like canned fruit and beans were _____.
12. Sometimes, the cows would panic and begin running in a _____.

Name _____

INSTRUCTIONS: Use the prefixes and suffixes from the box to change the root word to fit the sentence. You may use both a prefix and a suffix, and you may use the prefixes and suffixes more than once.

non-	not
-ous	full of something; having something
im-	not
-able	likelihood or ability to
out-	beyond or more than
-ity	having something; full of something

1. (fame) Annie Oakley's shooting ability made her _____.
2. (comfort) Cowboy clothes were tough and _____
for long hours on the trail.
3. (run) Almost nothing can _____ a speeding horse.
4. (danger) River crossings were very _____.
5. (possible) Taming mustangs was almost _____.
6. (perish) Without a refrigerator, food on the trail must be
_____.
7. (popular) Cowboys only increased in _____ after
the drives ended.

Holidays Around the World

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Word Count: 1,679



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A note on spelling:

To ease student reading of names and terms, this book uses spellings that are as close as possible to phonetic English. You may wish to review words such as *Koran* and *Hanukkah* and introduce their traditional spellings.

Holidays Around the World
Level T Leveled Reader
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Written by Peter C. Montin

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Festive holidays fill the months between November and March.

Introduction

People all around the world love to celebrate special holidays. As each month comes to an end, we turn our calendars and look for the holidays that will come during the new month. It seems that there is no time of the year that holds more holiday excitement than the time between November and March. It is a season of holidays.

Holidays during this season are usually filled with **traditions**. Traditions are things that people do because the people before them did those same things. Traditions are passed down from one **generation** of people to another. Holidays are usually happy times. They are times when friends and family get together. People celebrate with song, dance, and lots of good food. In this book, you will read about many of the different holidays that kids just like you, from all around the world, celebrate during this season of holidays.



During most holidays, families come together.



Two Moslem boys in Indonesia read the Koran during Ramadan.

Ramadan

Each year, people who belong to a faith called Islam set aside an entire month to celebrate a holiday called Ramadan. Islam uses a calendar that is based on the moon. Ramadan, the ninth month of the calendar, begins with the sighting of the new moon. During this month-long holiday, people read the Islam holy book, the Koran. They also pray and fast.

Muslims who fast do not eat or drink during the day. According to Islamic tradition, people cannot eat as long as there is enough light to see the difference between a black thread and a white thread. Each morning before the sun rises, most people eat a small meal. At sunset, the fast is often broken with a fruit called dates, followed by sunset prayer, and then dinner. Friends and relatives often eat together. The biggest day of celebrating comes after the last day of Ramadan. Families and friends join together for large meals, and cities hold festivals.



Muslim family members break their fast at the end of Ramadan.

The tradition of fasting serves many purposes. It helps remind the more fortunate people of Islam that there are people who are always hungry. It reminds them to give thanks for what they have. It also reminds them to be generous and share their good fortune with those who are not as fortunate. Ramadan is a time to think about one's life and to do good deeds for others.

Do You Know?

One Ramadan tradition began with a king who would go out to look for the new moon that begins the holiday. Children went out with the king, carrying colored lanterns and singing songs to guide the way. In some places today, children carry colorful lanterns into the night and sing songs at the start of Ramadan.



Muslim women and children during prayer at the end of Ramadan.



A Jewish family enjoys a Hanukkah meal.

Hanukkah



Hanukkah is a holiday celebrated by Jewish people, who practice a faith called Judaism (JOO-dee-is-um). Judaism also uses its own calendar, and Hanukkah falls in the third month. This eight-day holiday begins in late November or in December.

Hanukkah is known as the “Festival of Lights.” During each of the eight nights of Hanukkah, Jewish families light candles held in a special candle holder called a **menorah** (meh-NOR-ah). The entire family gathers each night for the lighting of the menorah.

A menorah holds nine candles—one for each night of Hanukkah, and one to light the other eight candles. The ninth candle, called the **shamash**, sits taller than the others. On the first night of Hanukkah, only one candle

and the shamash are lit. On each of the next nights, one more candle is lit, until on the last night, all of the candles are burning.



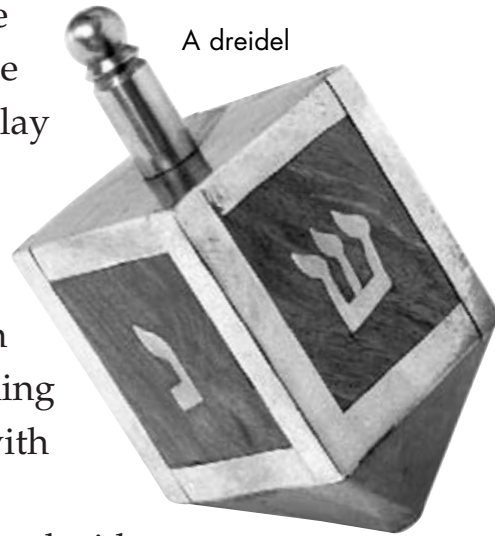
A menorah

As part of the Hanukkah tradition, people also give and receive gifts throughout the eight days. Usually, children get one

small gift and a little money each night. They are encouraged to give at least part of the money to others who are less fortunate.



People decorate their homes in blue and white. They play traditional games, including the game of **dreidel** (DRAY-del), which is played by spinning a four-sided top with different Hebrew letters written on each side.



Winning the game depends on which letter is showing when the dreidel stops spinning. Families and friends sing songs and eat delicious, rich foods made with or cooked in oil. Potato pancakes and jelly-filled pastries are among the favorites.

Do You Know?

Latkes (LAT-kuhs) are one of the traditional foods of Hanukkah. They are pancakes made from grated potatoes mixed with eggs, onions, and flour. They are fried in vegetable oil until they are crispy on the outside and soft inside. Latkes are served hot, and many people like to dip them in applesauce or sour cream.



A Mexican-American girl celebrates Las Posadas, a nine-day Mexican Christmas celebration. Participants recreate Mary and Joseph's search for lodging on the night of Jesus's birth by going door to door and asking to be invited inside.

Christmas

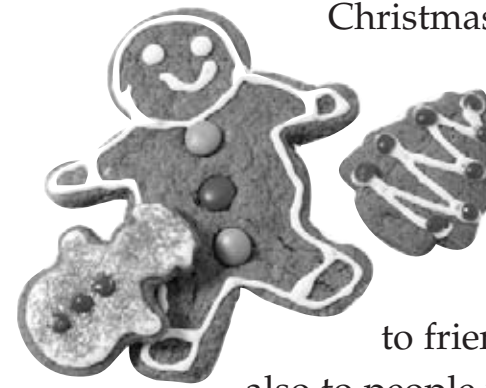
Christmas is a special holiday celebrated by people of the Christian faith. While it is officially celebrated on December 25, it has become filled with activities that begin well before that day. In this way, Christmas is really a holiday season that lasts for days or even weeks. It is the biggest Christian holiday of the year.



Most people who celebrate Christmas bring a pine tree into their homes and decorate it with lights and **ornaments** a week or two before Christmas Day. They place brightly wrapped gifts under the tree. They open the gifts either the night before Christmas or on Christmas morning. People also hang little lights in and around their homes and decorate with red, green, and white.



Christmas trees and lights decorate many Christian homes.



Christmas is a time for many traditions and activities. The Christmas season is a season of giving, not only to friends and family, but also to people who are poor or in need. Toys, clothing, and food are collected and given to those who have very little. Many cities and towns have fairs, celebrations, and parades. On Christmas



Day, Christians visit with family and friends, open presents, and eat special foods, especially sweets. Many Christians go to church on Christmas Day or the night before. They sing songs and pray that others will be safe, healthy, and happy during the holiday season.



Kwanzaa



Each year from December 26 until January 1, many African Americans celebrate Kwanzaa. It is not a holiday connected to a specific faith. Instead, it celebrates African-American history and the many contributions of Africans and African Americans. Many of the traditions of Kwanzaa come from harvest celebrations on the continent of Africa.

Kwanzaa is seven days long. At the beginning of the holiday, families set up a table or shelf with a special mat, candles, and a bowl or basket of vegetables. These vegetables celebrate a good harvest and other accomplishments during the year. Families also display one ear of corn for each child. Homes are decorated with streamers, balloons, and flowers of black, red, and green.



This Kwanzaa table includes the kinara, the unity cup, and harvest vegetables.



One candle in the kinara is lit for each night of Kwanzaa.

On each night of Kwanzaa, someone in the family, often the youngest child, lights one candle in a special holder called a **kinara** (KEE-nah-rah). The candles are red, green, and black, to match the colors of the African flag. On the sixth day of Kwanzaa, family and friends come together for a big meal. They pass a special cup around the table. Families tell a traditional African-American story or share something about African-American history or culture before everyone takes a sip. Gifts are often exchanged, and children usually receive a book, toy, or video that teaches something important about life.



Chinese New Year

Many Chinese people celebrate a 15-day-long holiday known as Chinese New Year. The holiday is based on the Chinese calendar and begins on the first new moon of the new year.

During the 15-day Chinese New Year celebration, people do many things they hope will bring them good luck during the coming year. They clean their homes from top to bottom, decorate with flowers, and put out a special tray of candies.



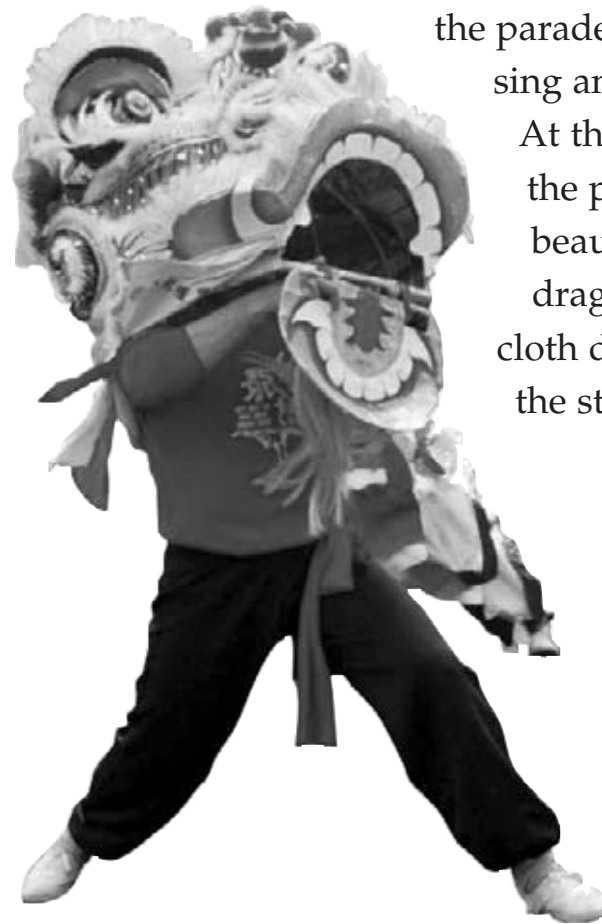
Red
money
envelopes

Red and orange are the lucky colors for Chinese New Year. People wear red clothes and eat foods such as oranges. They decorate their homes with red pieces of paper printed with good-luck sayings. They also give gifts of money in red paper envelopes.

The biggest celebration comes on the fifteenth night. In cities and towns, people play games and light fireworks. Dancers in costumes perform the flashy Lion Dance. Friends visit each other and wish each other well in the coming year. At the end of the celebration comes the Dragon Parade.

Everyone gathers to watch the parade, and people sing and dance.

At the end of the parade, a beautiful, lucky dragon made of cloth dances down the street.



The Lion Dance is
wild and colorful.



Relatives sing songs and celebrate the Chinese New Year together.

Families celebrate Chinese New Year in a variety of ways. Some families honor members who have died. They have a large dinner for the spirits of the dead and for those still living in order to honor family unity. All of the festivals and traditions of Chinese New Year welcome the coming of spring.

Do You Know?

Traditionally, Chinese people celebrated everyone's birthday at the same time. According to Chinese tradition, everyone turns a year older on the first day of the new year. So everyone celebrates his or her birthday on the same day!

Holi



Holi is a holiday celebrated by people of the Hindu (HIN-doo) faith. Most Hindus live in the country of India. Holi is celebrated during the first part of March on the first day after the full moon.

Holi is the festival of colors, and it celebrates the return of spring. It is a time filled with games, sports, and mischief. Everyone is allowed to break the rules, play pranks, and have fun. Bright colors play a big part in the holiday festivities, and they cover everything in sight. People wear brightly colored clothing and decorate their homes with colorful fabrics, powders, and dyes.



Family members decorate each other for the Holi festival.



Before the bonfire, the ground is brightly painted.

The night before Holi begins, people build big bonfires, sing, and dance. All throughout Holi, children and adults alike play rowdy games. People chase each other and try to spray each other with colored powder or water. Boys and girls split up and have contests with each other. Many people wear white clothing so that the splashes of color will show up. Enemies try to forget their fights and be happy together.



Fireworks greet the new year.

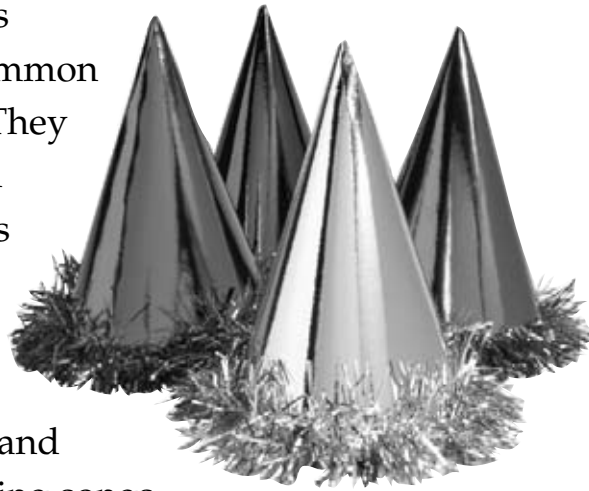
New Year



People all over the world celebrate the new year. No matter what country you live in or what religion you belong to, the new year is the time when you celebrate the passing of the old year and the coming of the new. On New Year's Eve, many people stay up until midnight to greet the new year. They count down the last seconds of the old year and greet the new one with exploding fireworks, shouting, songs, and all sorts of **merriment**.



New Year's parties are common everywhere. They are filled with colorful pieces of paper tossed into the air, noisemakers, and hats. People sing songs



and wish their friends good luck in the coming year.

It is also a time when people make **resolutions**, or promises to themselves, that they will do something good for their health and well-being.



Conclusion

People around the world celebrate many different holidays. No matter what the place, faith, or culture they come from, all holidays have many things in common. They all celebrate family, friends, sharing, and love.



A Native American medicine man of the Tohono O'odham tribe in prayer on winter solstice

Do You Know?

Many other cultures around the world celebrate the winter solstice—the day when the sun is the farthest south in the sky. In the Northern hemisphere, it is the shortest day of the year. In the Southern hemisphere, it is the longest day. Native Americans, ancient Europeans, and hundreds of other cultures celebrate the winter solstice as part of honoring the cycles of nature.



Holiday	Time	Faith or Nationality	Events
Ramadan	9th month of Islamic calendar	Islam	Fasting during the day Giving to those less fortunate
Hanukkah	25th day of Jewish month of Kislev (late Nov. or Dec.)	Judaism	Lighting the menorah Playing dreidel Eating foods with oil
Christmas	December 25	Christianity	Giving gifts Decorating a tree Giving to those less fortunate
Chinese New Year	The first new moon of the year	Chinese	Wearing and decorating with red Fireworks and parades
Holi	Late February	Hindu	Wearing bright colors Games and pranks
New Year	January 1	All	Staying up until midnight Fireworks, songs, and noise



Glossary



- dreidel** a four-sided top used in a Hanukkah game (p. 11)
- generation** all the people who are born and live at about the same time; parents are one generation, and their children are the next generation (p. 5)
- kinara** a special candleholder for Kwanzaa candles (p. 16)
- merriment** fun and happiness (p. 22)
- menorah** a special candleholder that holds eight candles plus the lighting candle of Hanukkah (p. 9)
- ornaments** small hanging decorations (p. 13)
- resolutions** promises to oneself to do good things (p. 23)
- shamash** the candle in a menorah used to light the other candles (p. 10)
- traditions** customs handed down through generations (p. 5)



Name _____

INSTRUCTIONS: Use the book to help you fill in the chart with details about each of the holidays.

	Decorations	Foods	Activities	Purpose
Ramadan				
Hanukkah				
Christmas				
Kwanzaa				
Chinese New Year				
Holi				
New Year				

Name _____

INSTRUCTIONS: Read each sentence and find the subject. Circle the simple subject (noun) and underline any words or phrases in the subject that modify it.

1. Many of the traditions of Kwanzaa come from harvest celebrations on the continent of Africa.
2. The holiday is seven days long.
3. Homes are decorated with streamers, balloons, and flowers of black, red, and green.
4. Families also display one ear of corn for each child.
5. The candles are red, green, and black, to match the colors of the African flag.
6. During the 15-day Chinese New Year celebration, people do many things that they hope will bring them good luck.
7. People wear red clothes and eat foods such as oranges.
8. They decorate their homes with red pieces of paper painted with good-luck sayings.

Name _____

INSTRUCTIONS: Read the words in the left-hand column. Circle the suffix and write the root word on the line. Then read the words in the right-hand column, add the suffix *-ion* or *-tion*, and write the new word on the line. Then, on the lines below, choose any three words you wrote and write a sentence for each one.

Find Root Words	Add Suffixes
abbreviation _____	calculate _____
attention _____	digest _____
subscription _____	observe _____
humiliation _____	graduate _____
institution _____	product _____

1. _____

2. _____

3. _____

Name _____

INSTRUCTIONS: Read the clues to figure out which content word to write in each blank. See how many you can get right without checking the book.

Clues	Content Words
holiday celebrated for 8 days	
people fast from sunup to sunset during this holiday	
Hindu festival celebrating the return of spring	
candle holder used during Hanukkah	
lanterns are an important part of this festival	
candle holder used during Kwanzaa	
four-sided top	
people put these on trees at Christmas	

HOLIDAYS AROUND THE WORLD • LEVEL T • 4

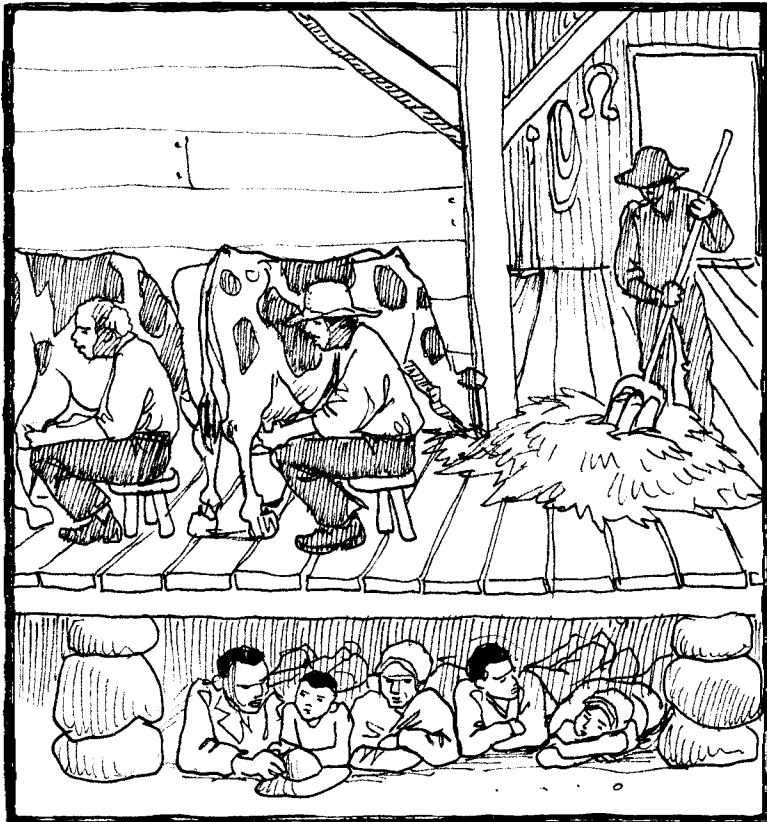


SKILL: CONTENT VOCABULARY

Running for Freedom

A Reading A-Z Level T Leveled Reader

Word Count: 1,470

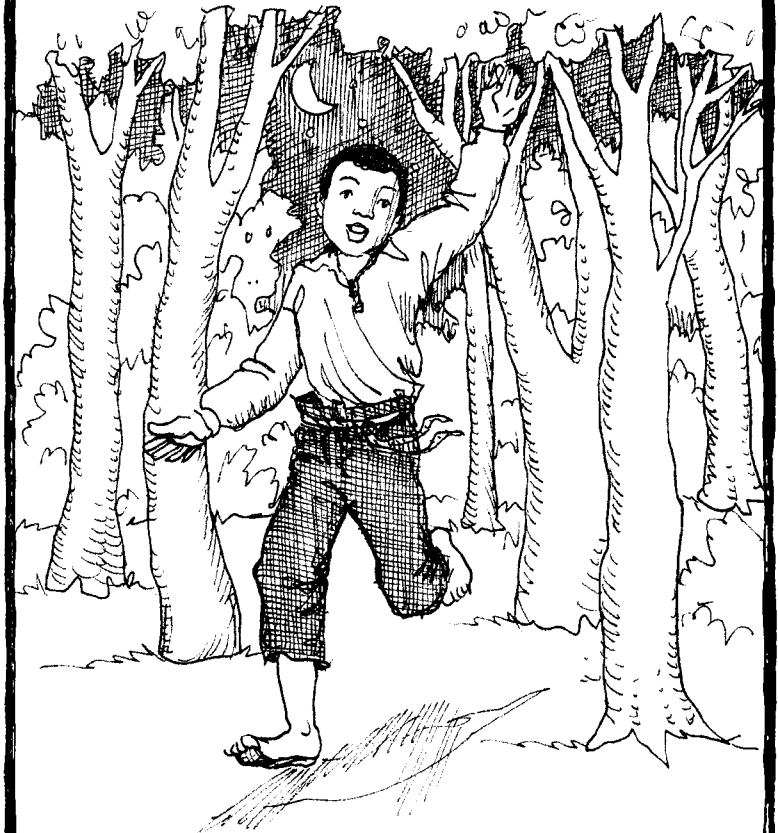


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Written by Katherine Follett
Illustrated by Marcy Ramsey

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Running for Freedom

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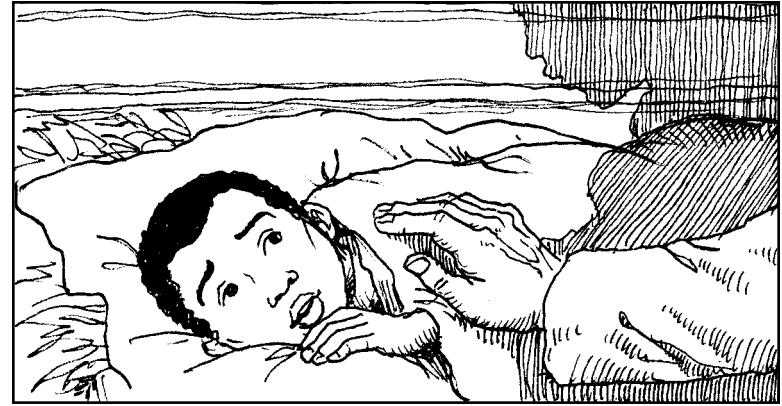
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Running

It was too dark outside. Usually, we got up before the sun rose, but I could tell that it was too early for my father to be shaking my arm.

“Daniel!” he whispered.

“No,” I groaned. I had been picking cotton all day. I could still feel my fingers throbbing as I tried to wave my father away. He picked me up by the arms and carried me outside.

“Shh, now,” he said, and I fell asleep again.

Daddy was the carriage driver for Mr. and Mrs. Winters, our owners. My mother had been a nanny for little Mary Winters. But Mary was grown now, and Momma was gone.

I must have muttered in my sleep, because I heard Daddy saying “Shh,” again. I woke up and saw dark trees. I heard soft footsteps all around. I looked over my shoulder and saw the bent back and shoulders of Emmy, another field worker on the cotton plantation. She walked with her head down, moving at a very quick pace.

“Can I get down?” I asked my father.

Emmy whipped her head around and gave me a cold look. She put her fingers to her pursed lips and kept moving. Suddenly, I realized what was going on. We were running.



Momma

Momma was sold a few years ago, when I was still too young to work in the fields. Mrs. Winters used to send me to the local inn, where I did cleaning. The inn paid me for my work. But I had to take the money right home and give it to Mrs. Winters. She would count every cent and tell Momma to spank me good if she thought even one penny was missing.

Momma would make it look as if she was doing what she was told, but she would just tap me lightly. I would yell and cry as if it really hurt. That seemed to make Mrs. Winters happy.

One night I came home from the inn as usual. It had been a windy day, and a dollar had blown out of my hands. Mrs. Winters noticed the missing money right away. She called in the cook and told her to spank me hard. The cook didn't know about Momma's trick, so she spanked me as hard as she could. I yelled and cried for real. After it was over, I asked the cook where Momma had gone.

"Well, Mistress Mary's about grown now. I suppose they sold your momma to someone who needed her," she said.

I felt as if my heart fell down a deep well and landed on the bottom with a cold splash. Daddy's eyes looked hollow when I got back to our one-room shack. He only said one thing about Momma being sold: "Someday we're going to be free, and we'll find her." That day of freedom was today.



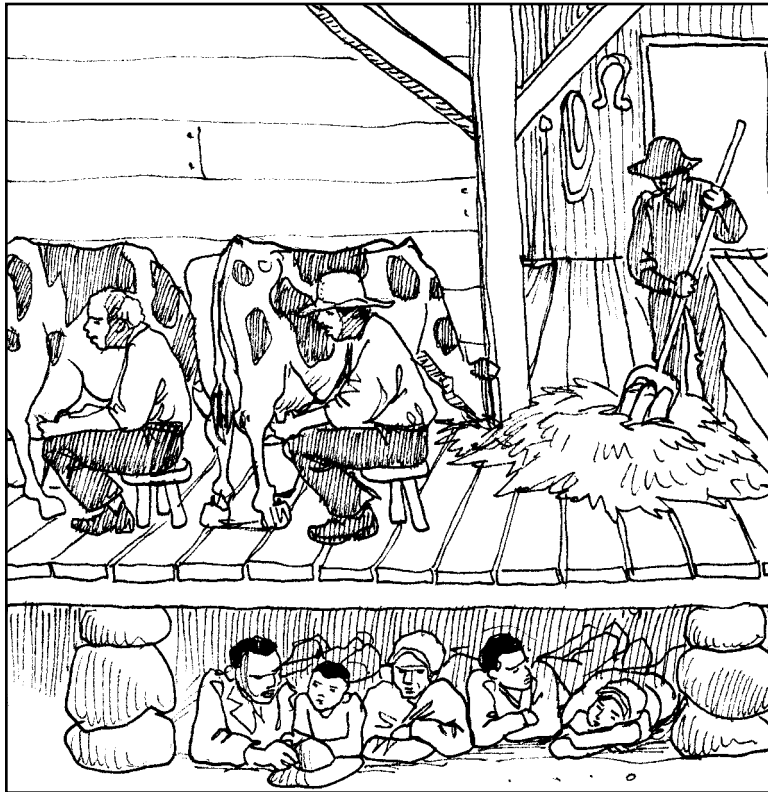
The Barn

"Haul in," Emmy said. She pointed across a field at an old sagging barn, and we went inside. She felt around the floor until she found a trap door. She motioned us all into a small space under the floor. Everyone had to lie down in order to fit. Emmy closed the door behind her and it was silent.

Eventually I leaned toward Daddy. "Do we have to stay here all day?" He nodded and put his fingers to his lips.

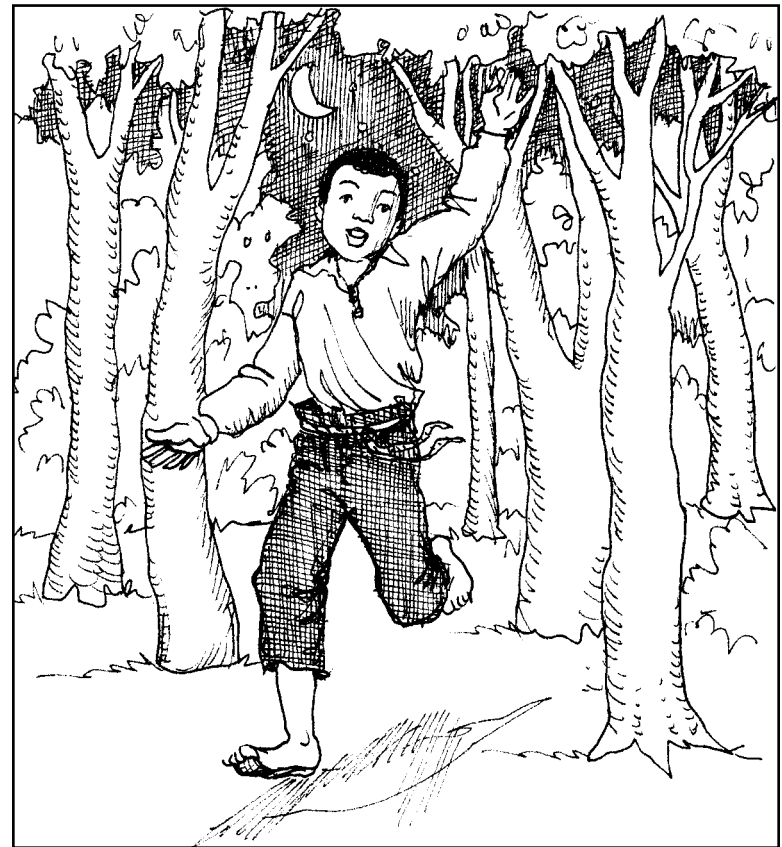
"Sleep," he said. I didn't think I could sleep. I still felt as if I had energy running through all my muscles. Soon we would find Momma! But I kept still.

Sunlight began to peek through the boards above us. Feet began to thump over our heads. I could tell that all of us were scared. No one was sleeping. We heard the other slaves talking as they worked. Did they know we were here? I almost wished that I could peek my head through the trapdoor and whisper, "Come with us! Come and be free!" But I kept silent, and they kept working.



The Gully

The hours last a long time when you're crouched in an uncomfortable position. But finally, night fell. The noises from the barn had been silent for some time, but still we waited. Finally, Emmy pushed open the door and a gust of the sweetest fresh air in the world came rolling down into that tiny space.



She led us into the woods again, and we all began walking. I was so happy to be out of that cramped space that I began to run. The others started going faster, too. We came to a dark road and started hopping, skipping, and jumping. Someone in the back even giggled. We were going to be free! I could feel the cold air from the north pouring down toward me and making my legs springy and light.

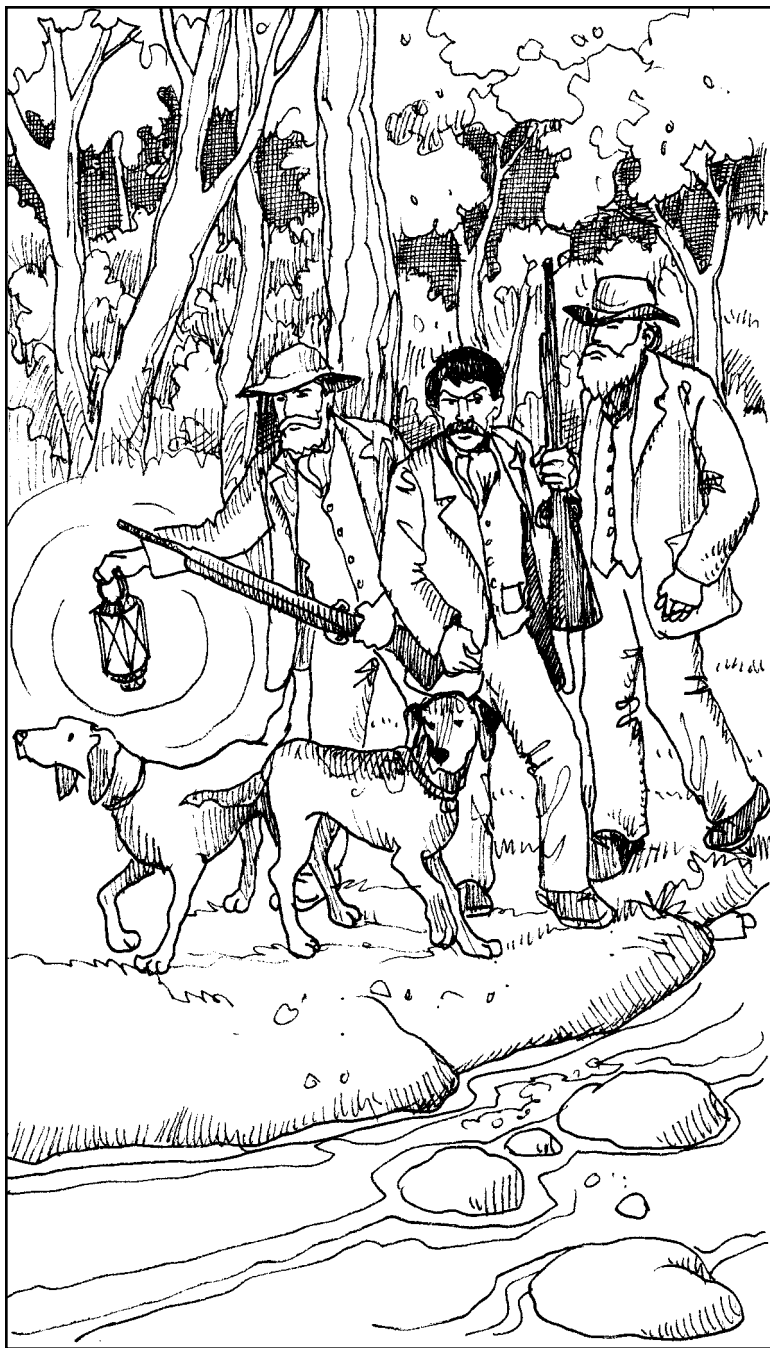
Suddenly, I heard sounds that made every inch of my skin feel like ice. Hounds! Someone was coming after us. We all looked to Emmy.

“Gully!” she whispered. She went leaping through the trees, and we leaped after her. We rushed down a steep hill until our legs hit swampy water. It got deeper and deeper. It was up to my thighs, then my chest. Daddy pulled me up on his shoulders. It looked as if we were in trouble—we couldn’t swim, but Emmy led us toward the opposite shore. There were stumps sticking out of the water there, and if we stood still, under the pale moonlight, our heads would look like more stumps, especially to someone across the swamp.

We heard the men and hounds come crashing down the gully. They came to the edge of the swamp where the water kept the dogs from following our scent. The dogs howled and roared as if they wanted to charge across the swamp and attack us. Then I heard the sound of a shotgun loading.

The roar of the gun swept across the water and echoed back. It startled me so badly that I made a peep before I could stop it. Emmy’s hand swiftly and silently came up and closed over my mouth. The sound of another shot blasted out across the water. The men were trying to scare us into making noise and showing ourselves.

After a long time, they turned and led the hounds back up the gully. We kept still for another half an hour before we dared to creep back out of the swamp. There was no more running or laughing when we got back on the road.



The River

We passed many days in hidden spaces in the homes and barns of people who helped us along the way. We spent many nights walking silently through the woods, cold and hungry. We had little food of our own and had to rely on the people who helped us to give us food. Now came the hard part. We had to cross the Ohio River in order to get to freedom.

Emmy gathered us in a tight circle. "You're going to have to do something that seems completely wrong," she whispered. "You're going to go up to a white man and let him put you in chains. But he's going to help you. You'll look like his slaves. No one will suspect you when he leads you across the bridge."

We met the white man, Mr. Avery, just before dawn. Emmy wished us luck before she headed south again to find more slaves and lead them to freedom. Mr. Avery took most of our clothes and packed them in a trunk. He put us in shackles. Daddy looked scared. I suddenly wondered if this was all a trick for Mr. Avery to capture runaway slaves. I started to cry. I hated those chains. All I could think about was how Momma's hands and feet would have been in them as they led her away.

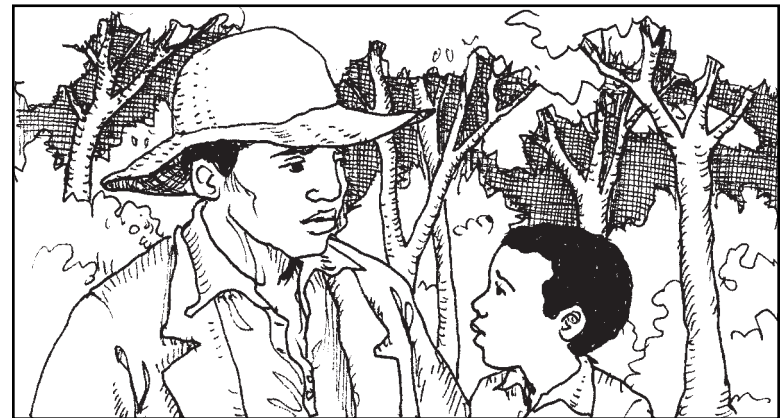


"We have to trust him," Daddy said. But his voice didn't sound so sure.

Mr. Avery led us through the streets. The white people ignored us. The black people glanced quickly at us and then looked away.

Mr. Avery led us onto the bridge. I was crying because I was still so afraid that he would turn us around and sell us again. But then I felt my feet touch the soft soil on the Ohio side of the river. Somehow, my tired feet could tell that I was free. Even though I was still in the shackles, I felt the weight of them disappear.

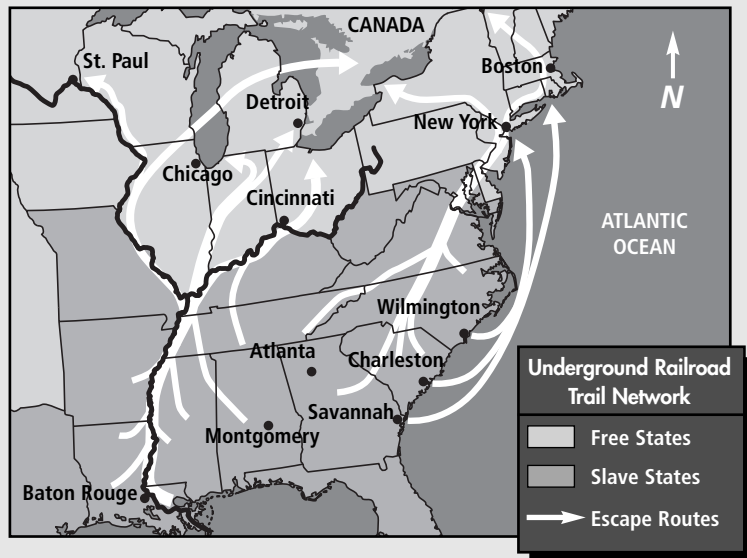
"We did it, Daniel," Daddy said with a shaky voice. "Someday we'll go back for her."



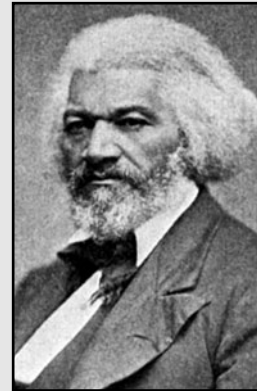
The Underground Railroad

The Underground Railroad was a loosely organized network of homes, trails, and people whose goal was to help slaves from southern states flee north to freedom. After the Fugitive Slave Act of 1850, the goal was to get escaping slaves as far north as Canada. The Fugitive Slave Act allowed slave owners to recapture escaped slaves in the northern free states and take them back to the South. Hefty fines and jail time were the punishment for anyone who helped escaping slaves.

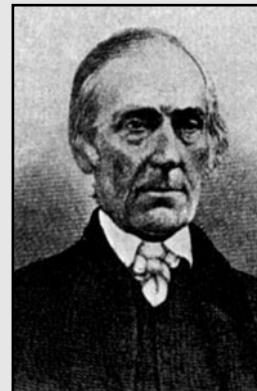
After some slaves were freed, they went back south to lead others north to freedom.



Famous Faces on the Underground Railroad



Frederick Douglass was born into slavery, but escaped and became the publisher of the *North Star*, an anti-slavery newspaper. Douglass's house in Rochester, New York, was one of the last "stations" for hundreds of escaping slaves fleeing to Canada.



Levi Coffin was a white anti-slavery activist in Ohio who reported helping an average of 100 escaping slaves a year for 33 years. His house, where many slaves hid, rested, and were fed and clothed, is on the National Register of Historic Places.



Harriet Tubman was a former slave who became known as "Moses" for her 19 trips to the South to help at least 300 escaping slaves flee north. At one time, a reward of \$40,000 was offered for her capture.

A Famous Place on the Underground Railroad



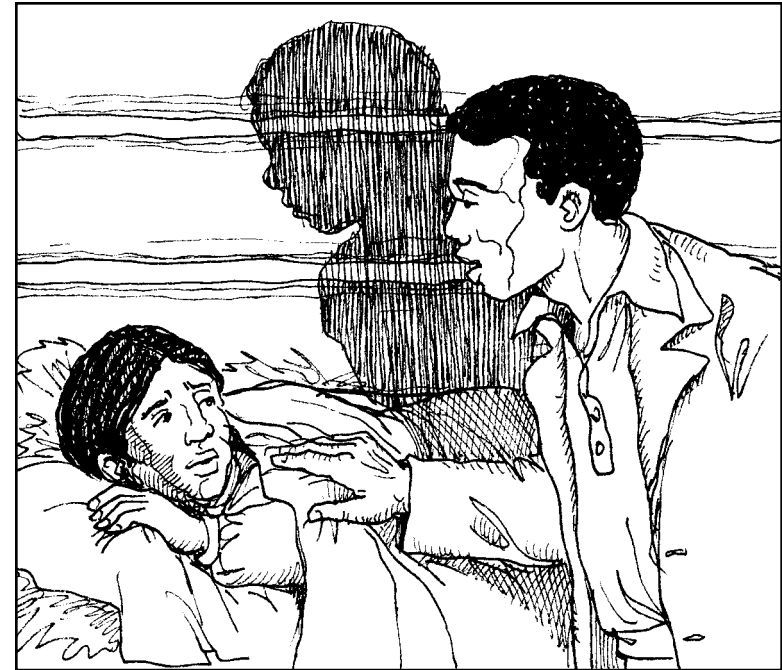
Artist's rendering: Levi and Catharine Coffin greet escaping slaves at their home in Newport, Indiana. The Coffins are credited with helping thousands of former slaves.



Today, the Levi Coffin House is a National Historic Landmark site and museum.

Children can explore the small upstairs room where the Coffins hid slaves (left). A bed could be moved to conceal the door.

They can also see a wagon used to hide slaves on the move.



The Next Stop

It was too dark outside when I nudged her.

"No," Momma groaned, and waved her hand at me.

"Shh, now," I said. Finally, she opened her eyes, and I could see them shining in the dark.

"Daniel?" she whispered.

"It's time to go," I said. "I'm here to lead you. We're running!"

Name _____

INSTRUCTIONS: Complete the chart to show how the setting changed throughout the story. In each box below, describe the setting. You may use your book to find the words used to show changes in setting.











Name _____

INSTRUCTIONS: Write *simple subject* on the line if the sentence has only one subject. Write *compound subject* on the line if the sentence has more than one subject.

1. Daddy and I hid under the baseboards of the barn for a very long time.

2. The men and women were working so hard.

3. The water was freezing cold.

4. Emmy put her hand over my mouth so I wouldn't make a sound.

5. The men and their hounds raced towards us.

6. Momma was sold to another family when I was very young.

7. I started to cry because I hated those chains.

8. Mr. Avery and Emmy discussed the plan.

9. Emmy wished us luck before she left.

10. Daddy and I were free at last!

Name _____

INSTRUCTIONS: Write one sentence for each pair of homonyms. Use each homonym once within the sentence. You may add suffixes such as *-ed*, *-s*, or *-ing* to the homonyms to help make them fit in the sentence.

Example:

(where/wear) Where were you when I decided to wear that horrible outfit?

1. (eight/ate) _____

2. (plane/plain) _____

3. (in/inn) _____

4. (flew/flu) _____

5. (red/read) _____

6. (cent/sent) _____

7. (knew/new) _____

8. (two/too) _____

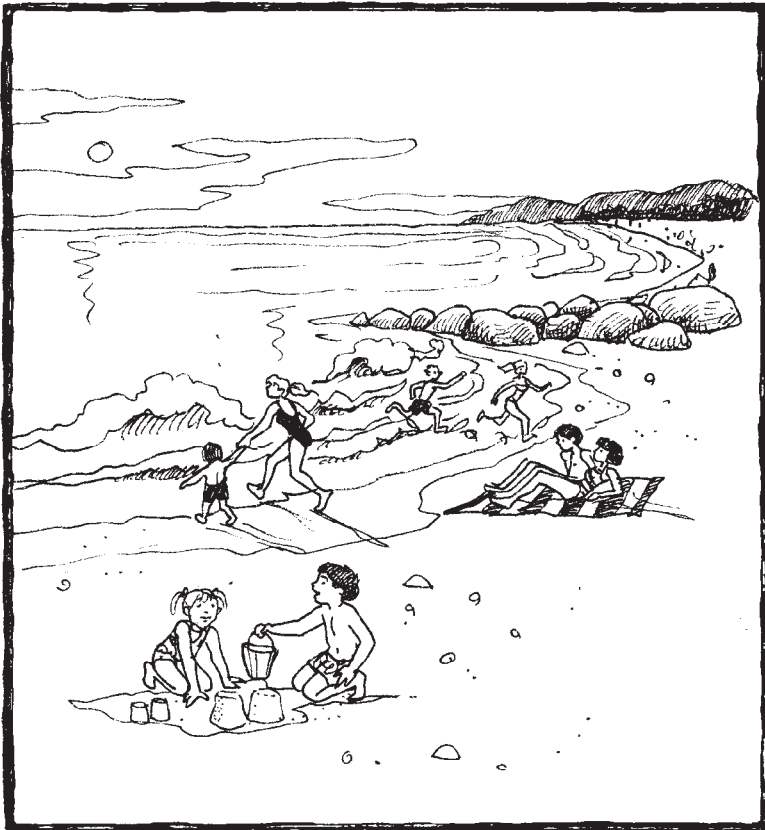
9. (their/there) _____

10. (hair/hare) _____

Horseshoes Aren't Just For Good Luck

A Reading A-Z Level T Leveled Reader

Word Count: 1,600

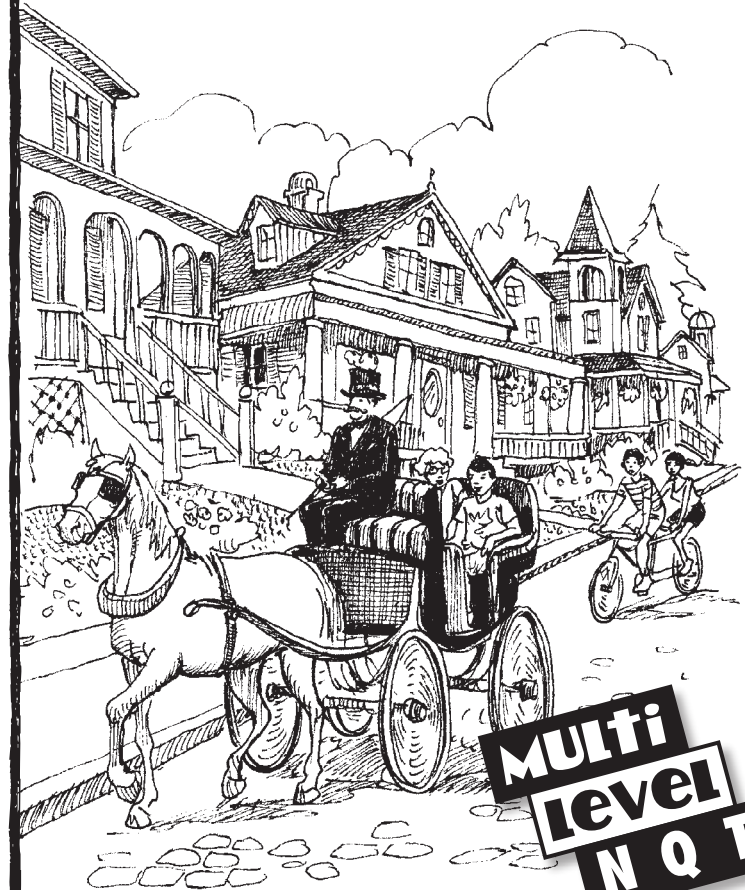


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LEVELED READER • T

Horseshoes Aren't Just For Good Luck



Written by Deborah Ambroza
Illustrated by Marcy Ramsey

www.readinga-z.com

Horseshoes Aren't Just For Good Luck

Note about the series: *Horseshoes Aren't Just for Good Luck* is the first book in a three-part series written by Deborah Ambroza. The books that follow are: *Ants in My Bed* and *Bats in the Attic*.



Written by Deborah Ambroza
Illustrated by Marcy Ramsey

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Level T Leveled Reader
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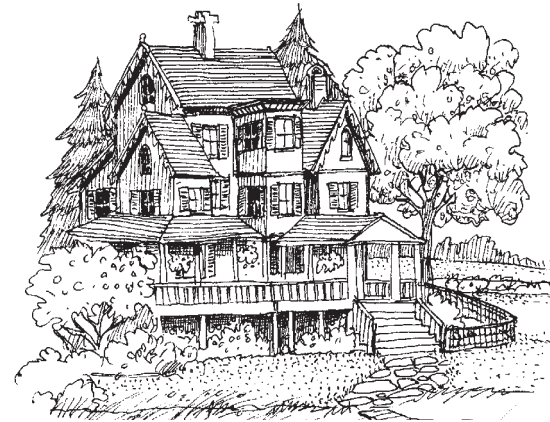
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Introduction

Everyone has a special summer they treasure as the best summer of all. Mine came when I was nine years old, and it started after my first train ride alone. That short ride out of the city began my summer-long exploration of new surroundings. Even now, the pattern of smells, sounds, and textures seems so immediate that I can imagine myself back there. When my father first suggested that I visit Gram, his grandmother, at her big beach house, I had no way of anticipating the outcome. I had never seen an ocean or a beach. Dad said he had loved spending long, lazy summers there, and his enthusiasm colored every story he told.

Leaving Home

I kept asking my dad, "But what is it like there?" and he said, "The entire environment of a beach town is different from the city. People have chosen to enjoy a different way of living. You'll see." Raised with the routines of life in the city, I wasn't sure what he meant by 'a different way of living.' In the taxi we took to the train station, Dad kept assuring me that I would love discovering it all for myself.

I rode alone on the train, watching the passing view change from my familiar city skyline to small towns, then to no towns at all. I wondered what it would be like where I was going. I didn't feel very reassured.

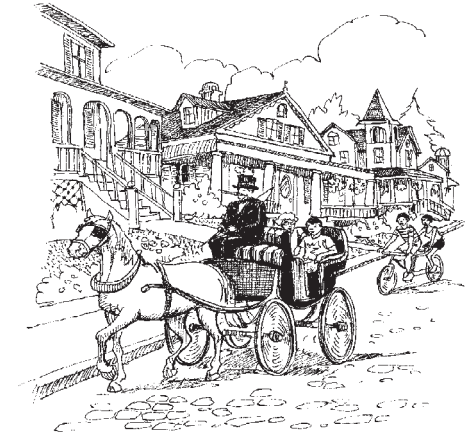


Life by the Sea

My questions vanished when I saw Gram waiting for me at the train station, laughing and waving her straw hat. Her friend Jim loaded my bags into his car and chose a route through Gram's little beach town so I could see what it was like.

The first thing I noticed was that most of the people we passed were walking or riding bicycles. There was also a beautiful horse ambling slowly down the shady street, drawing a carriage. No one was in a hurry at all. I could already see that a summer here was going to be unusual.

We stopped in front of a tall gray house that had a rambling garden with flowers of all kinds. Jim carried my bags as we climbed up the many steps to the broad front porch.



Gram started to prepare dinner for all of us. Whatever she was making had a sharp, spicy aroma. "While I'm doing this, go upstairs and pick any bedroom you like," she suggested. Creaking wooden stairs led up to a hallway with three bedrooms and a bath with large bay windows. Each room I examined had billowing lace curtains, was painted a different color, and was personalized with its own pattern of wallpaper. Choosing a bedroom was easy. Once I leaned my elbows on the windowsill of the sunny yellow room and breathed in the salt-tinged breeze from the ocean, I decided it had to be my room.



My Summer Home

The high, old-fashioned bed was inviting, so I plopped onto its plump comforter, stretched in satisfaction, and listened. It was very quiet, except for the background sound of the waves rolling onto the beach, over and over, wave after wave. The ocean was just outside the door.



I ran down the creaky stairs and announced, "I'm going down to the beach!" But Gram stopped me.

She said, "It's very important to learn the rules of the sea before you go to the ocean unattended. Come with me."

We took off our shoes on the porch and walked down to the beach together.



As we scrunched our toes in the damp sand, Gram explained the purpose of the two long, rock wall **jetties** that dominated the beach.

"Years ago, our shoreline was much broader. Over time, **erosion** (ee-RO-zhun) and the tides pulled much of the sand away," she said. "So the town decided to position these heavy rocks in two long rows to help protect the beautiful beach from eroding further."





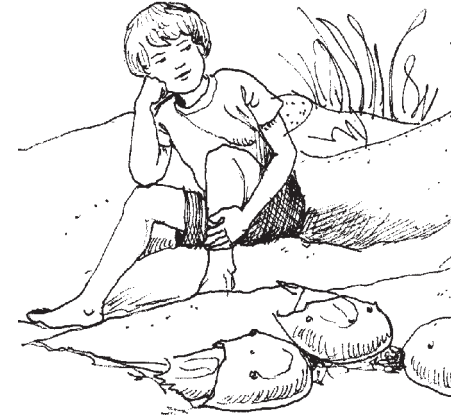
Gram cautioned me, "Only walk along the shoreline between the jetties. Always pay attention to the waves."

She described *currents* as strong flows of ocean water that could drag a swimmer far out to sea. And she said an *undertow* could pull a person under the surface and trap them there. I agreed not to go into the water unless she or Jim were with me.

My spicy welcoming dinner included little **crab cakes**, and there were flowers from her garden on the table. Jim told lots of stories about things he had found on the beach. After clearing the dishes, I was suddenly ready for bed. In my new pajamas, I burrowed deeply into my cool pillows and watched shadows from the lace curtains dance across the wall. Very soon, I was dreaming contentedly of running along a sandy beach.

Limulus

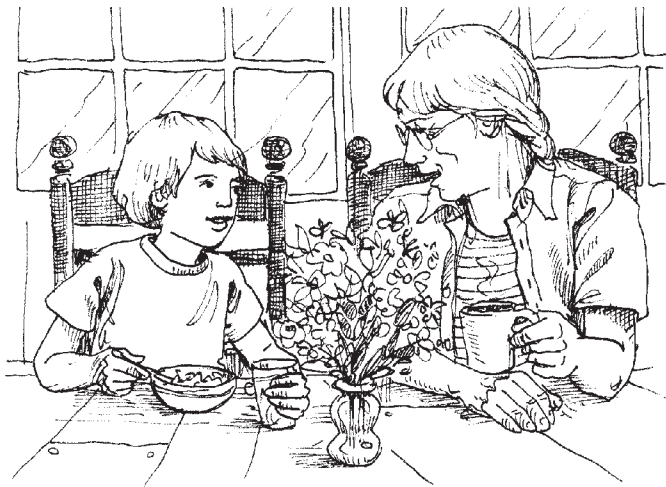
The screech of seagulls awoke me early the next morning. Pulling on shorts and a T-shirt, I ran downstairs as Gram called out, "Remember the rules!" I nodded yes as I dashed out into my new world. The early sunlight was almost rosy, and dozens of seagulls were gliding in wide figure-eights above my head.



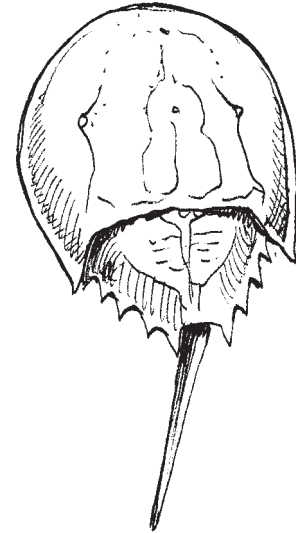
While watching the seagulls circle, I almost stepped on a turtle. No, a dozen turtles! The sand was covered with odd-looking creatures that had hard, brownish-gray shells and pointed tails. But when I looked closer, I realized they weren't turtles at all. Some of these strange creatures were lying upside down on their shells, rocking and wiggling. I crouched down to watch them wiggle until I heard Gram call me for breakfast.

As I tried to describe the creatures I'd seen, Gram laughed and said they were horseshoe crabs. "It's a type of **arthropod** (AR-throw-pod) that scientists call **limuli** (LIM-yoo-lie). But people just call them horseshoe crabs because of the U-shaped design in their shells. The waves float them onto the shore, and sometimes they land upside down on their shells."

She said that the upside-down crabs I had almost stepped on were trying to use their pointed tails to turn themselves upright. She said if they didn't turn over quickly enough, their undersides would become too hot from the sun and they would die.



She said the crabs floated in and out on the waves. If crabs became stranded on the beach after the tide receded, they tried to stay cool by **burrowing** into the wet sand. The female crabs came onto the beach to lay their green, jellylike eggs a few inches under the sand. One female horseshoe crab might lay as many as eighty thousand eggs in one season! Within two weeks, those eggs would develop into tiny **larvae** (LAR-vee), and the larvae would be washed out into the ocean. These young larvae were tailless but, toward the end of summer, they would **molt** and then develop tails.



Gram explained, "*Molting* is when an animal sheds its skin, fur, or feathers and then grows back new ones. Animals often molt because they are growing larger."

We returned to the beach that afternoon for a walk, and I watched her technique as Gram kept stopping to turn over any upside-down crabs. She turned them gently, in one motion. She also put several of the stranded crabs back into the ocean, to swim away. I was certain I saw her give a little pat to one or two of them.



Gram described the horseshoe crabs as long-distance swimmers but added that when they get tired, they just turn over and float on their shells as if they were little boats. When they are hungry, they stop swimming and gradually sink to the bottom of the ocean, where the water is saltier, and they find abundant sources of food.

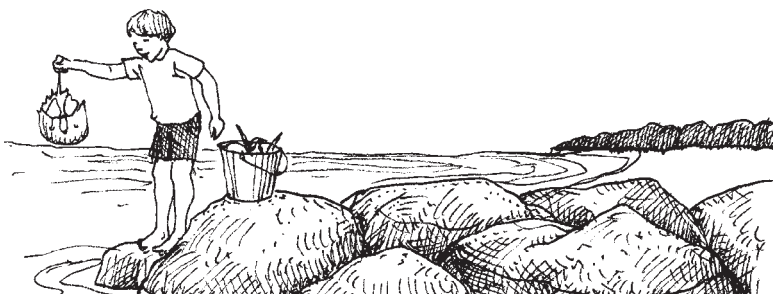
Horseshoe crabs are considered very valuable creatures. Scientists study them to learn more about their nine eyes and nervous systems. Their blood is used to test for some human diseases and also to test new drugs. Horseshoe crabs may look odd, but they have adapted to their changing environment and survived for 350 million years—since dinosaurs roamed the Earth.



Rescuing

I immediately assigned myself the role of Chief Rescuer of Valuable Arthropods. Every morning became a rescue mission. I turned over stranded crabs or tossed them back into the waves, if seagulls hadn't reached them first to eat their tender parts. Sometimes I tossed them from the end of the rock jetty, waved, and wished them "good luck" as they swam away. Many times they'd float back in and become stuck on the shore again, but I soon learned when the waves would take them farther out into the water.

I also tried to chase birds away when I saw them eating the eggs. But Gram told me I should leave the birds alone because for many years this had been their way of getting the food they needed on their flight back north.



Early one morning, I walked out to discover everything had changed again. There was not a single horseshoe crab in sight! I ran back to the house to ask what had happened to them. "It's all right," Gram said. "The crabs are done laying their eggs. They'll be back next year." I was disappointed, but I hoped that I could come back to Gram's big ocean house again next summer.

I walked back to the beach and plopped down onto the warm sand, watching the seagulls circling overhead. My crab rescue campaign had been an exciting new adventure. And, thanks to Gram, I had learned about the ocean environment, helped nature a little, and had seen a whole different way of living. Now I was ready for whatever my next summer adventure might be.

Read the follow-up stories
Ants in My Bed and
Bats in the Attic at Level T.



Glossary

- arthropod** (*n.*) an animal that has jointed legs, a body with two or more parts, and a skeleton on the outside of its body; arthropods include insects, crustaceans (such as crabs), and spiders (p. 13)
- burrowing** (*v.*) digging into something, such as sand, and burying or partially burying one's body (p. 14)
- crab cakes** (*n.*) a mixture of crabmeat, egg, spices, and breadcrumbs formed into patties and fried (p. 11)
- erosion** (*n.*) wearing away caused by wind, water, or ice (p. 10)
- jetties** (*n.*) walls built into the ocean to keep the beach from eroding (p. 10)

- larvae** (*n.*) the newly hatched forms of certain animals that look very different from their parents and that change greatly in appearance as they become adults (p. 14)
- limuli** (*n.*) arthropods commonly known as horseshoe crabs (one crab is a **limulus**) (p. 13)
- molt** (*v.*) to shed skin, fur, feathers, or a shell before they are replaced with new growth (p. 14)



Name _____



Instructions: Draw what you visualize in your mind for the pages indicated above each box.

Page 4

Pages 5 to 11

HORSESHOES AREN'T JUST FOR GOOD LUCK • LEVEL T • 1

Pages 12 to 14

Pages 15 to 19

SKILL: VISUALIZE

Name _____

INSTRUCTIONS: Write *Fact* or *Opinion* before each sentence. Refer to the book as necessary. Then write one opinion sentence about horseshoe crabs and one factual sentence about them on the back of this worksheet.



1. _____ Limuli have to be walking to chew their food.
2. _____ *Molt* means to shed a shell that is replaced with new growth.
3. _____ Crab cakes are delicious to eat.
4. _____ I had a lot to learn about living at the seashore.
5. _____ I could see sand and birds and blue sky and so many waves.
6. _____ The warm sand felt rough and kind of tickled my toes.
7. _____ These jetties were walls of rocks built into the ocean.
8. _____ Limuli often live to be eighteen years old.
9. _____ High tide occurs about every twelve hours.
10. _____ Lying in the sand is the best way to spend an afternoon.

Name _____

INSTRUCTIONS: This story is written in present tense. Change the underlined verbs to past tense.

Dad and I go (_____) to the train station in a taxi cab. We live (_____) in a city and do (_____) not own a car. We use (_____) public transportation when we travel (_____) in the city.

The train station is (_____) an old, large building that is (_____) restored. When I first walk (_____) into the station, I am (_____) amazed at how high the ceiling is (_____).

Since I am (_____) nine years old, I get (_____) a special bracelet put onto my wrist. We check (_____) my bags and put (_____) the claim ticket into my backpack. Dad waits (_____) with me until my train arrives (_____).

When my train arrives (_____), Dad and I go (_____) to see the conductor. The conductor is (_____) going to keep an eye on me during my journey.

I have (_____) a seat in the business class coach. I have (_____) a footrest attached to my seat. I also have (_____) a tray where I put (_____) my backpack. At the front of the coach is (_____) a TV.

After the train pulls (_____) out of the station, I put on my headphone, move (_____) my footrest up, and settle (_____) in to watch a good movie. Traveling on the train is (_____) fun.

Name _____

INSTRUCTIONS: Choose the correct homograph meaning for the underlined words. Write the letter on the line.

Homographs are words that are spelled the same and have different meanings. These words may be pronounced differently.

- | | |
|---------------------|----------------------------------|
| A. to see | F. a form of transportation |
| B. moving feet | G. move a hand back and forth |
| C. stairs | H. water moving across a surface |
| D. a grouchy person | I. to teach |
| E. an arthropod | J. a cutting device |

1. Gram asked me to sweep the steps. _____
2. How many steps did you take to walk to the beach? _____
3. The child waves goodbye to Dad from the train. _____
4. The ocean waves seem to flow onto the beach in groups of three. _____
5. I saw the ocean for the first time. _____
6. He used a saw to cut the tree down. _____
7. I can train a dog to shake hands. _____
8. Gram met me at the train station. _____
9. I turned the crab over and tossed it back into the waves. _____
10. My mother said I was being a crab when I yelled at my brother. _____

Remembering the Alamo

A Reading A-Z Level T Leveled Reader

Word Count: 1,456

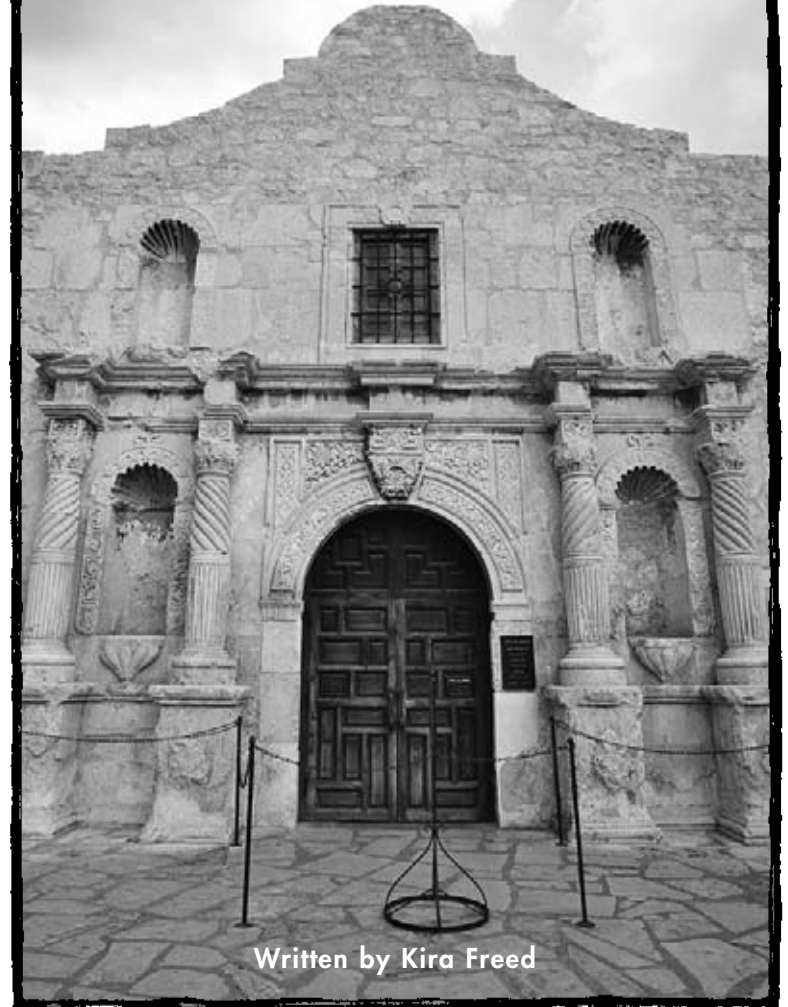


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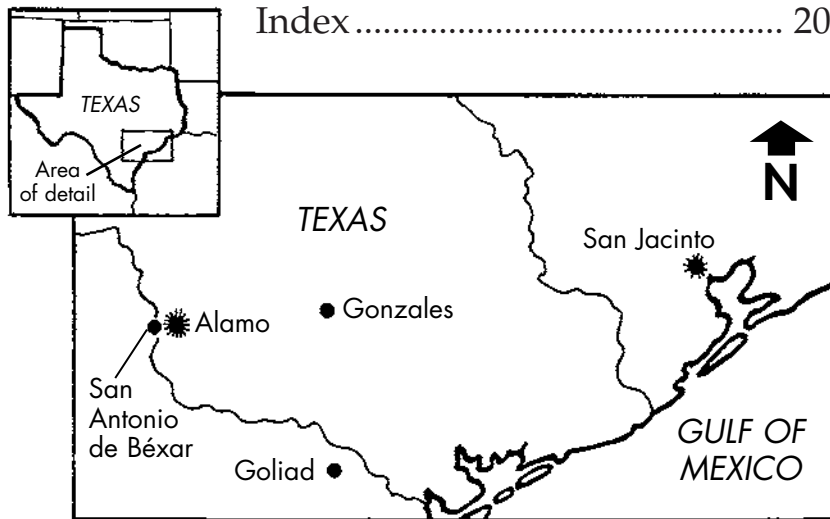
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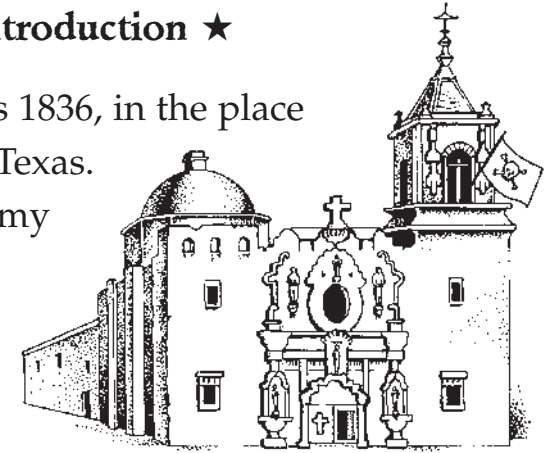


★ Introduction ★

The year was 1836, in the place now known as Texas.

The Mexican army held the Alamo under **siege**.

Mexican troops flew a red flag from the church



San Fernando church and mission in Béxar in the town of Béxar—a message to Texans inside the Alamo to expect no mercy.

For twelve days, Texan rebels held off Mexican soldiers, who greatly outnumbered them. Colonel William B. Travis sent urgent requests for more troops, but few came. Travis knew he and his men were likely to die defending the Alamo.

Do You Know?

Legend has it that on March 5, Travis told his men that the situation at the Alamo was hopeless. He drew a line in the dirt with his sword. He told the men to step over it and join him if they were willing to stay and fight the Mexican army, even to the death. Every man but one stayed and fought.

About 3:00 a.m. on March 6, Mexican soldiers silently took their positions around the Alamo. Just before dawn, the attack began. A few hours later, almost every person inside the Alamo had been killed.

During the siege and battle at the Alamo, about 200 Texans and 400 to 500 Mexican soldiers died. Many bigger conflicts have taken place over the years, yet the battle of the Alamo occupies an important place in United States history. Let's go back in time to learn why.

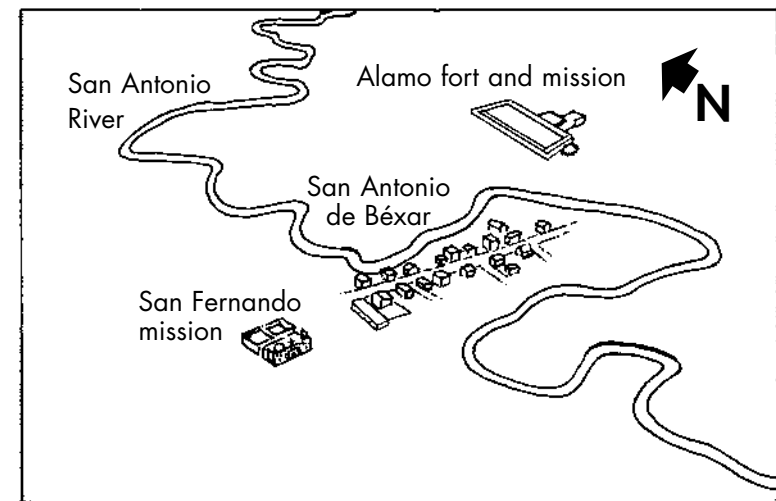


Battle of the Alamo

★ History ★

Mexico's original people were native tribes who had occupied the area for thousands of years. The Spanish arrived in the early 1500s in search of gold. They made Mexico a **colony** and worked to convert the natives to Christianity. Beginning in the late 1600s, they set up **missions** across the area now known as Mexico and the southwestern United States.

In 1718, the Spanish established a fort and a mission on opposite banks of the San Antonio River. Spanish settlers founded the town of San Antonio de Béxar across the river from the mission in 1731.





In 1801, the Spanish military started using the former mission at Béxar as a fort. The fort's name was changed to the Alamo, which is Spanish for "cottonwood tree."

In 1821, the first group of U.S. settlers came to Texas led by Stephen F. Austin, and then many more families followed. Texas was a wide-open **frontier** with rich land for farming and ranching. U.S. leaders dreamed of expanding their country all the way to the Pacific Ocean.

Do You Know?

Mexico revolted against Spanish rule and became an independent country in 1821. This made Texas part of Mexico instead of Spain. Mexico set up a republic in 1824 and adopted a constitution similar to the U.S. Constitution.

Mexico's flag



Most of the people living in Texas were **Anglo** settlers from the United States. There also were some Tejanos—Mexican-born settlers. Most of the Anglos were farmers who had become Mexican citizens. They were loyal to Mexico and grateful for the opportunity to settle there.

By 1830, the number of Anglos in Texas had grown to at least 20,000. The Mexican government became concerned that it was losing control of Texas and passed a law to stop more Anglos from moving there. The Mexican government also outlawed slavery, which angered Anglo settlers who wanted to have **plantations** and keep slaves.

★ The Fight for Independence Begins ★

When Mexico passed these laws, some Texans decided that Texas should become part of the United States. Others wanted Texas to become an independent country, and still others wanted Texas to become a separate state within Mexico.

Over time, more Texans did not want to be part of Mexico, and the Mexican government did not want to give up Texas. After allowing thousands of Anglos to settle within its borders, Mexico saw the settlers get angrier, and the government became concerned that the United States might use force to take control of Texas. Mexico sent soldiers and weapons to stop that from happening.

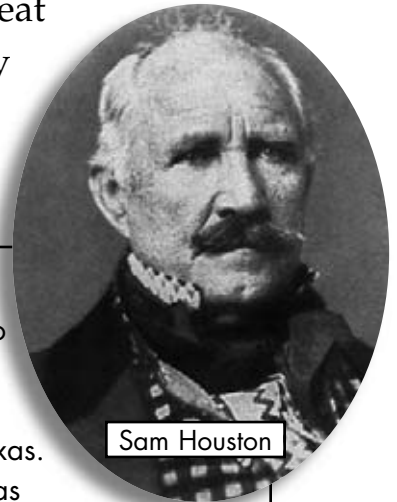
In 1833, General Santa Anna became Mexico's president. The next year, he turned Mexico's democracy into a **dictatorship**. This made Texans even more determined to get out from under Mexican rule.



Santa Anna

In early October 1835, the first battle of the fight for Texas independence took place in the town of Gonzales. When the Texans won, their hope for independence grew. Others joined the rebels, mostly volunteers from the United States. They surrounded the Alamo in late October 1835, holding Mexican troops inside the fort under siege.

The Texans finally attacked on December 5, 1835. Even though they were outnumbered three to one by Mexican troops, they took the fort from Mexican General Cós after four days of fighting. Santa Anna was enraged after learning of Cós's defeat and prepared a large army to attack the Texan rebels now inside the Alamo.



Sam Houston

Do You Know?

While Texans had the Alamo surrounded, a group of Texan leaders met in the town of San Felipe to discuss the future of Texas. They set up an independent Texas government, choosing Henry Smith as governor and Sam Houston as leader of the rebel army.

After the Texan victory, many troops left the Alamo to fight elsewhere in Mexico. Only about 100 men stayed at the Alamo under the command of Colonel James C. Neill. Winter was coming, and the men were running out of food and supplies. Neill wrote to General Sam Houston asking for more troops and supplies.

Houston did not believe that the Alamo could be defended. He sent Jim Bowie and 30 troops to move the men out and destroy the Alamo so that it could not be used by Mexican troops. But Neill convinced Bowie that the Alamo was valuable and should be defended.

Bowie wrote to Texas Governor Henry Smith, who agreed to send more troops and weapons. Colonel William Travis arrived with 30 soldiers. Davy Crockett, a former U.S. soldier, arrived soon after with a group of volunteer riflemen.



Davy Crockett

Do You Know?

Soon after Davy Crockett arrived, Colonel Neill left because his wife was ill. He chose Travis to lead the troops, but the volunteers chose Bowie as their commander. The Alamo's two leaders often did not get along, but they both tried to strengthen the Alamo's defenses and kept asking Texan leaders for help.

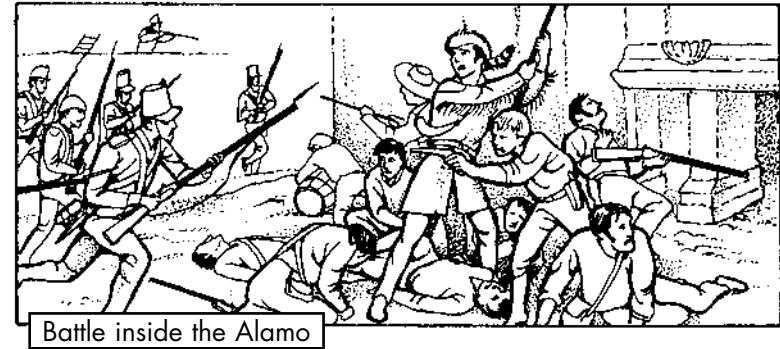
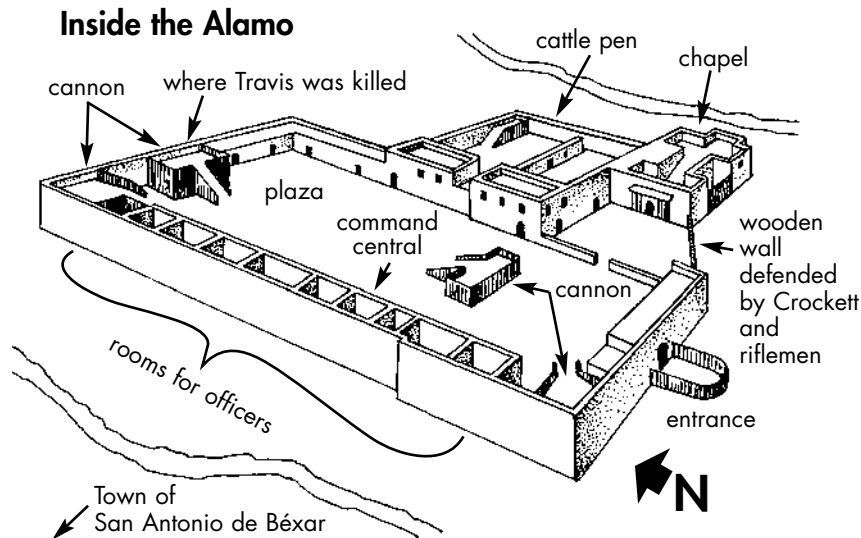
Determined to take back the Alamo, Santa Anna and several hundred Mexican soldiers arrived on February 23. When Santa Anna raised a red flag from the church in town, the Texans responded with a **defiant** blast from their cannon. Santa Anna's troops surrounded and shelled the Alamo for 12 days while the Mexican army grew to 2,000 men.

Even though Santa Anna had the Alamo surrounded, Texans were able to slip through holes in his lines, and Travis continued to send messages asking for help. One week after Santa Anna's siege began, at least 32 men arrived to help the Texans. The men inside the Alamo now numbered between 180 and 260, but they were still greatly outnumbered.

★ The Battle of the Alamo ★

Just after midnight on March 6, 1836, Santa Anna ordered his soldiers to take their positions around the Alamo. They moved silently into place and waited until just before dawn. Then the **call to arms** was sounded, and the attack began.

The Mexican soldiers caught the Texans by surprise. When the Texans heard a yell near the northeast corner, they fired their cannons in that direction and killed many Mexican soldiers. Return fire from the Mexican army killed Travis.



Santa Anna sent more soldiers, but **sharpshooters** inside the Alamo killed many. The Mexican troops retreated from the Alamo in order to regroup. When Santa Anna ordered them back to the Alamo, they scaled the walls and **swarmed** the compound.

The Texans were now fighting hand to hand, their rifles useless. They fought bravely even though they knew it was hopeless. Sometime between 6:30 and 9:00 a.m., the battle was over. Almost every Texan male was killed, and the few left alive were executed soon after.

Do You Know?

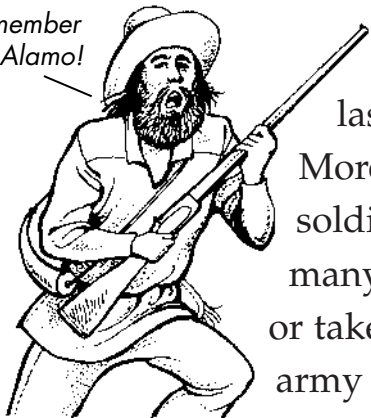
No one knows for sure how many men died at the Alamo. It is believed that between 190 and 260 Texans and between 400 and 500 Mexican soldiers died. The few women, female children, and two slaves were **spared**.

★ After the Battle ★

Santa Anna didn't give up at the Alamo. He was determined to end the Texas fight for independence. After the Mexican army won another battle at Goliad, Santa Anna believed he had stopped the rebellion. Promising to drive every Anglo out of Texas, he ordered his army to move across Texas, destroying Anglo settlements along the way.

Sympathy for Texans grew in the United States as news spread about the Alamo battle. Many Anglo Texans and U.S. citizens wanted revenge for the deaths of the men killed by Santa Anna's troops. On April 21, 1836, Houston's army surprised Mexican troops at San Jacinto. As they charged, the Texans

Remember
the Alamo!

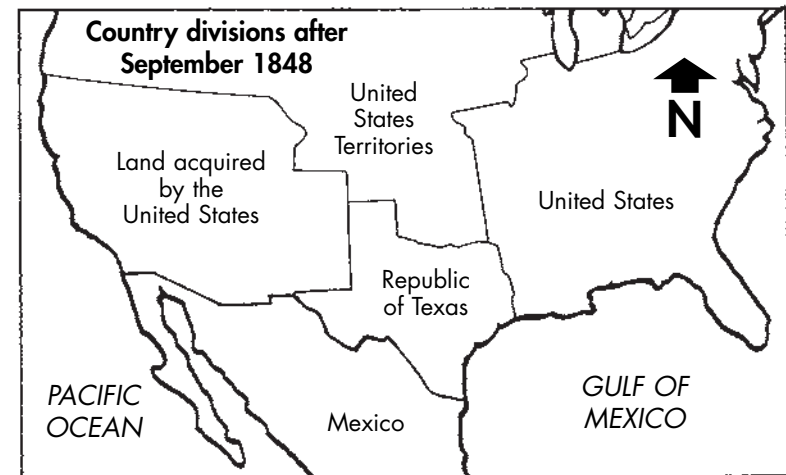


shouted, "Remember the Alamo!" The battle

lasted only 18 minutes. More than 600 Mexican soldiers were killed, and many others were wounded or taken prisoner. The Texas army lost only nine men.

Santa Anna was captured the next day. Texans wanted him killed, but Houston spared his life on the condition that he recognize Texas independence and take all his troops out of Texas. He agreed to do both.

Later, the Mexican government refused to accept Texas independence, but Texans didn't care. They considered themselves free and elected Sam Houston president of the Republic of Texas. Texas applied for U.S. statehood right away, but first it had to form a stable government of its own. Until it gained statehood in December 1845, it was considered an independent nation by the United States and by many countries in Europe.





The Alamo as it looks today

★ Conclusion ★

Texans and U.S. citizens had many reasons for fighting at the Alamo. Some fought to become rich landowners, others fought to keep slaves, and most believed they were fighting for freedom. Whether Anglo or Tejano, most people living in Texas wanted independence from Mexico's dictatorship.

In the United States, the battle of the Alamo is remembered as a symbol of heroism in the struggle for freedom. In Mexico, it is seen as part of a campaign to steal Mexican land. History is rarely as simple as right and wrong. Only by learning all viewpoints can we understand what truly happened at the Alamo.

Who's Who

★ Stephen F. Austin (1793–1836) ★

Stephen Austin led a group of U.S. settlers to Texas in 1821. He commanded the rebel Texas army for a short time before leaving to seek the U.S. government's help for Texas independence. After Texas became independent, Austin served as secretary of state until his death later that year.

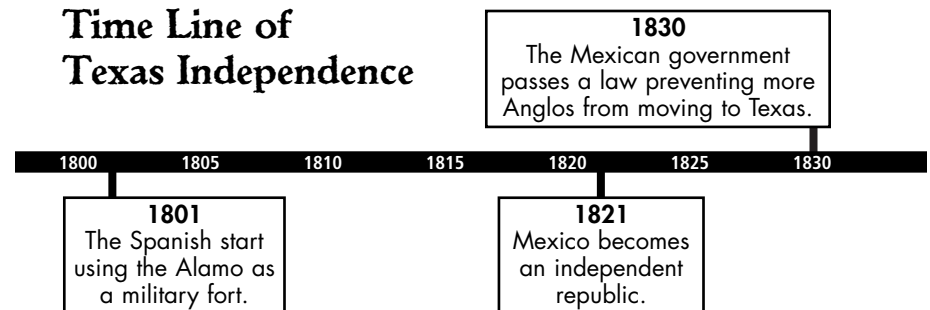
★ Jim Bowie (circa 1796–1836) ★

Jim Bowie was best known as a fearless street fighter. He made money from dishonest land deals and slave trading. Bowie moved to Texas in the late 1820s, became a Mexican citizen, and married the daughter of a prominent Mexican family. Following the 1833 deaths of his wife and in-laws from disease, he joined the fight for Texas independence and died at the Alamo.

★ Davy Crockett (1786–1836) ★

Davy Crockett learned at an early age to survive in the wild. After joining the U.S. Army at age 25, he earned a reputation for bravery and skill with a rifle. He served in Tennessee's state government and later in the U.S. Senate. In 1835, he lost his seat in Congress and went to Texas in search of land and money. He arrived at the Alamo just weeks before Santa Anna's siege and joined the fight for Texas independence, dying at the Alamo.

Time Line of Texas Independence



at the Alamo

★ Sam Houston (1793–1863) ★

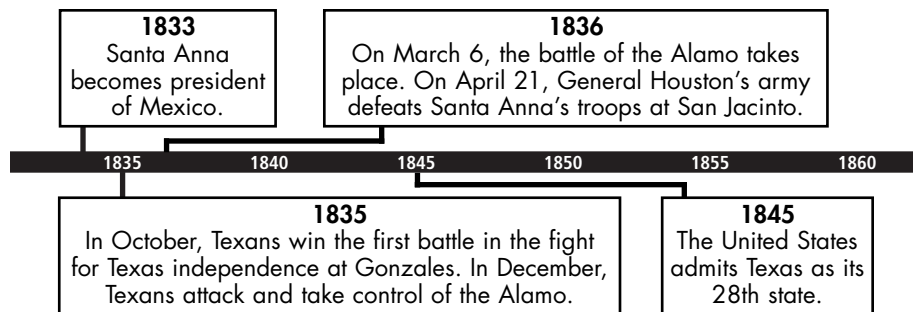
Sam Houston fought in the War of 1812. He served in the U.S. Congress and as governor of Tennessee before moving to Texas in 1832. He wanted Texas to become part of the United States. Houston was commander in chief of the Texas army and defeated Santa Anna at San Jacinto. After Texas gained its independence, Houston was elected president of Texas. When Texas joined the United States, he became a Texas senator, and later the governor.

★ Antonio López de Santa Anna (1794–1876) ★

In the 1820s, Santa Anna was a hero of Mexico's struggle for independence from Spain. However, after he became president in 1833, he became a dictator. He fought fiercely against Texas gaining independence from Mexico. After losing that fight, he was forced to resign. He was president of Mexico again from 1841–45 and 1853–55.

★ William Barret Travis (1809–1836) ★

William Travis left Alabama to escape debt and an unhappy marriage. When he arrived in Texas, he quickly joined a group of men who wanted Texas to become a U.S. state. He became a colonel in the Texas army and was in command during the siege and battle at the Alamo. He was one of the first Texans to die at the Alamo.



★ Glossary ★

Anglo	a person of white European descent (p. 8)
call to arms	signal sounded by a bugle (p. 13)
colony	land controlled by another country (p. 6)
defiant	boldly resisting an enemy (p. 12)
dictatorship	a government ruled by a leader who takes total control without approval from the people (p. 9)
frontier	a wilderness area at the edge of a country's official border (p. 7)
missions	centers built by the Spanish in the New World to convert Native Americans to Christianity (p. 6)
plantations	areas of land for growing crops that require many workers (p. 8)
sharpshooters	people very skilled in using a gun (p. 14)
siege	surrounding and often attacking an enemy for a long period of time while preventing them from getting food and other supplies (p. 4)
spared	saved from death; didn't kill (p. 14)
swarmed	moved in great numbers (p. 14)

★ Index ★

Austin, Stephen, 7, 18	Santa Anna, Antonio López de, 9, 10, 12-16, 19
Bowie, James, 11, 12, 18	Travis, William Barret, 4, 11-13, 19
Crockett, Davy, 11, 12, 18	
Houston, Samuel, 10, 11, 15, 16, 19	

Name _____

INSTRUCTIONS: In the first column, write what you already know about the Alamo. In the second column, write what you would like to learn. After you finish reading, fill in the third column with what you learned from the book.

What I Know	What I Want to Know	What I Learned

Name _____

INSTRUCTIONS: In the left-hand boxes, write three main ideas from the book *Remembering the Alamo*.
In the right-hand boxes, write at least two details that support each main idea.

Main Idea	Details 1. 2.
Main Idea	Details 1. 2.
Main Idea	Details 1. 2.

Name _____

INSTRUCTIONS: Find and circle all of the words that should be capitalized, either because they are at the beginning of the sentence or because they are proper nouns.

conclusion

texans and u.s. citizens had many reasons for fighting at the alamo. some fought to become rich landowners, others fought to keep slaves, and most believed they were fighting for freedom. whether anglo or tejano, most people living in texas wanted independence from mexico's dictatorship.

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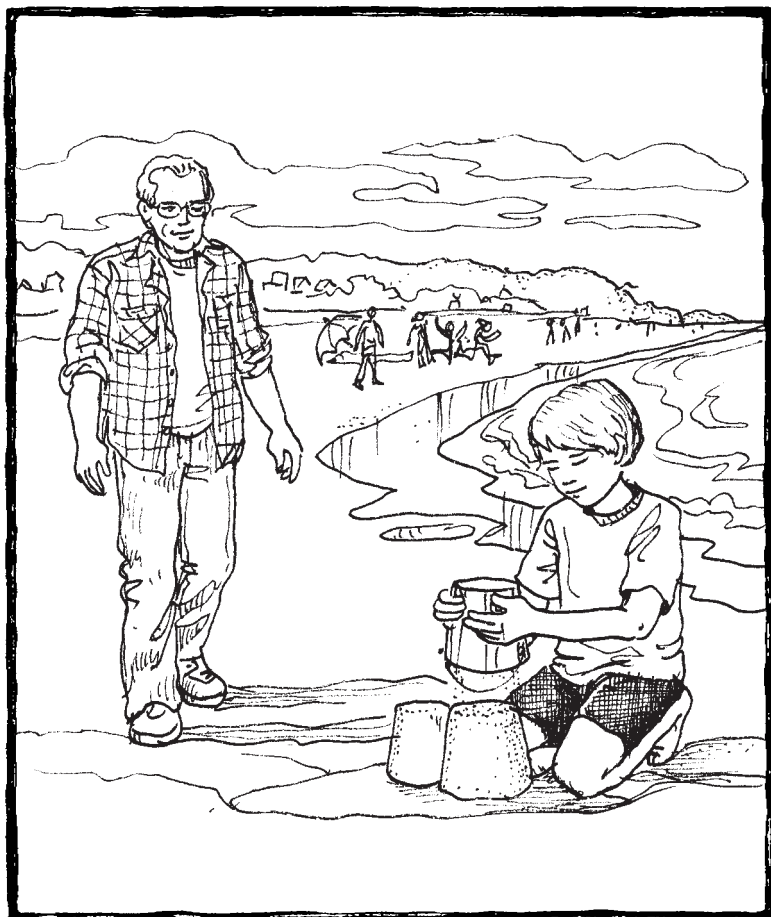
only by learning all viewpoints can we understand what truly happened at the alamo.



Ants in My Bed

A Reading A-Z Level T Leveled Reader

Word Count: 1,569

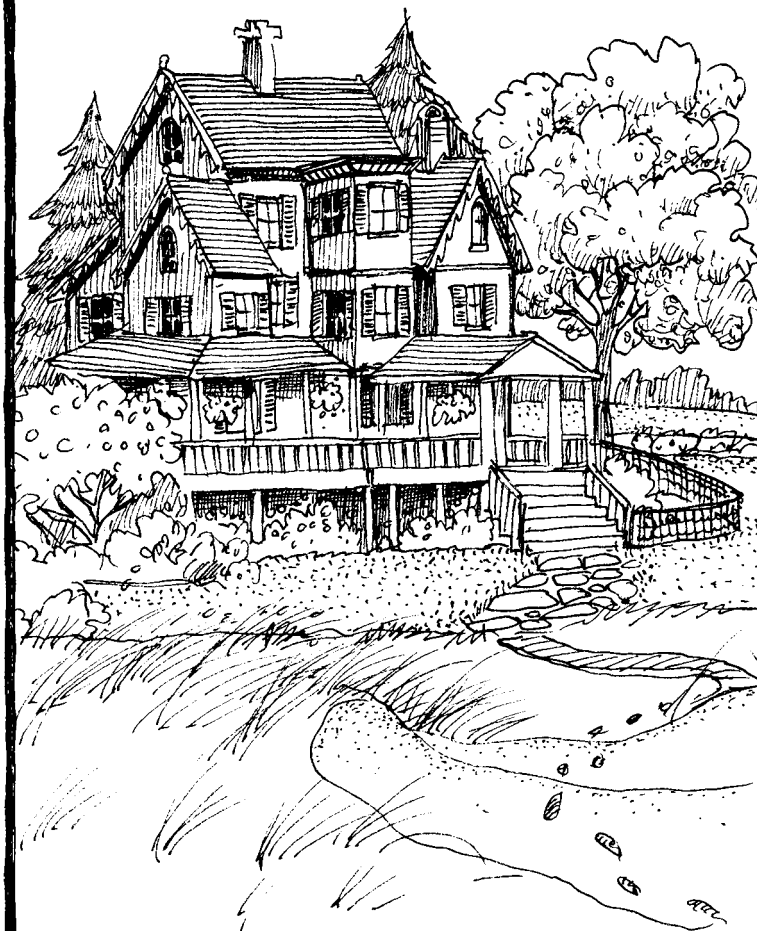


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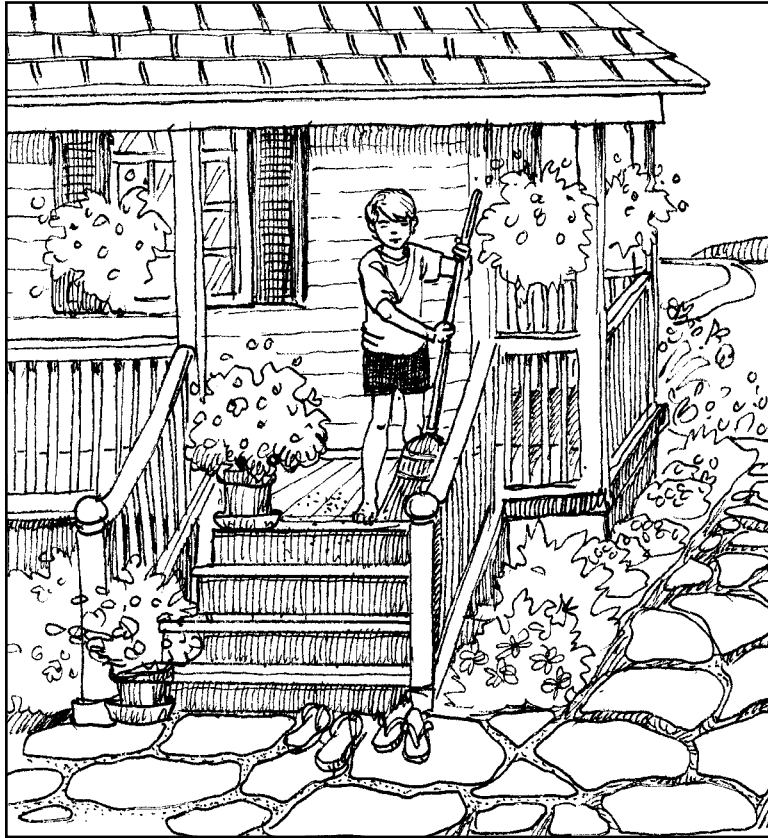
Ants in My Bed



Written by Deborah Ambroza
Illustrated by Marcy Ramsey

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Note about the series: *Ants in My Bed* is the second book in a three-part series written by Deborah Ambroza. The first book in the series is *Horseshoes Aren't Just for Good Luck*, and the last book is *Bats in the Attic*.

Ants in My Bed
Level T Leveled Reader
© 2005 Learning Page, Inc.
Written by Deborah Ambroza
Illustrated by Marcy Ramsey

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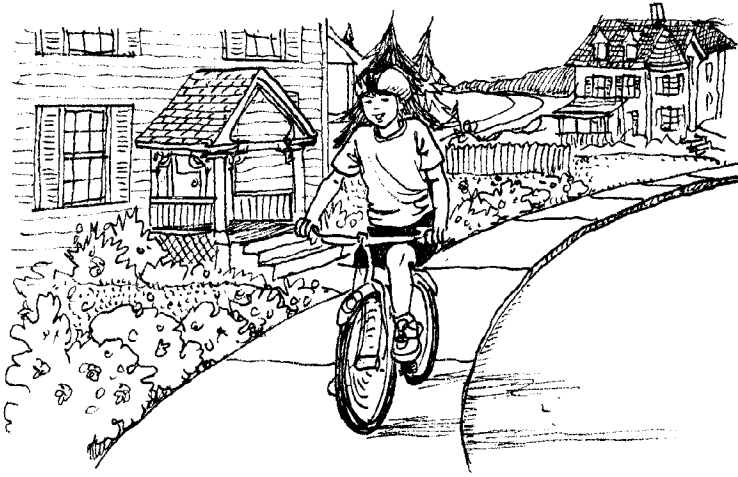


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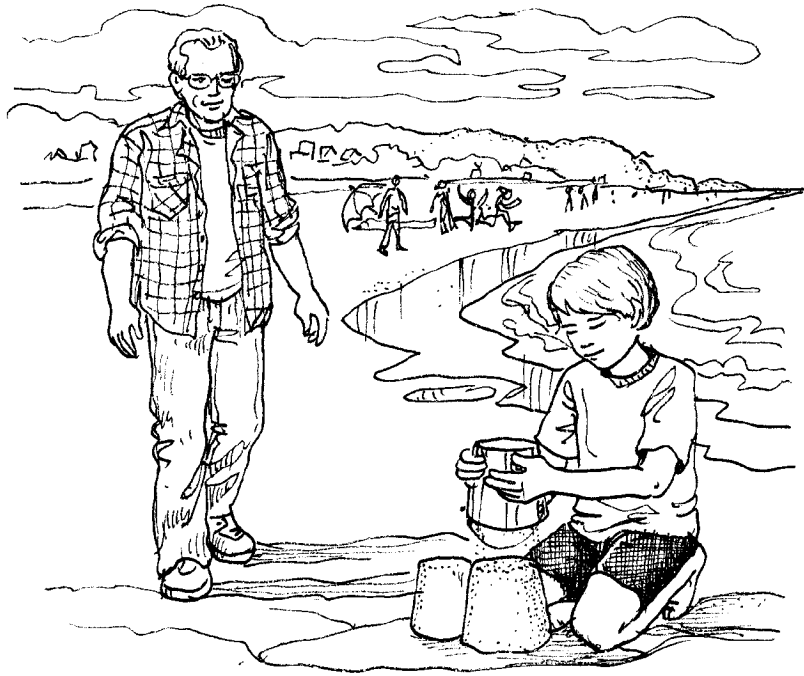
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Gram's Peanut Butter Cookies	20

Introduction

When I was nine years old, I spent the summer with my great-grandmother. Gram lived in a large, gray, **cedar shakes** house at the seashore. I stayed in the yellow bedroom, where my father slept as a boy. The room's window faced the ocean, and the sound of the waves breaking against the shore always helped me sleep. At least it did until the ants showed up a few weeks into my visit.

I spent the first few weeks exploring the sea and saving the lives of some horseshoe crabs. I also had been busy riding the old bike Gram's friend, Jim, gave me. I was not allowed to ride very far on the weekends because the town and beach became crowded with tourists. During the week, I explored as I pleased.

Jim usually dropped by in the mornings to eat breakfast with Gram and me. Sometimes he'd stick around to help Gram with big chores around the house. Other times he would take me down to the shore and teach me how to make sand castles.

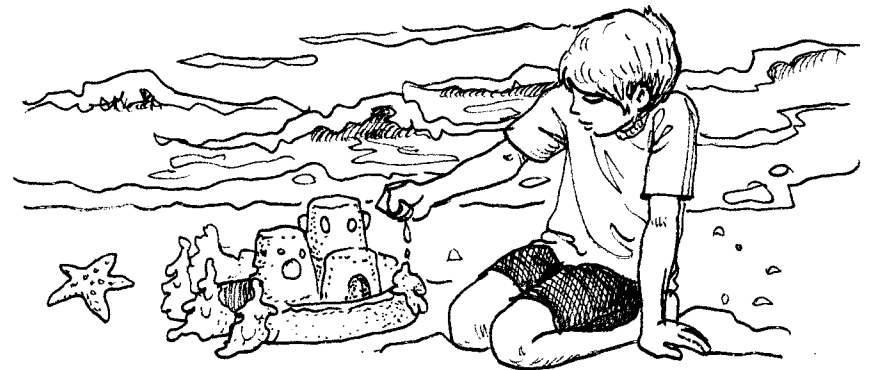


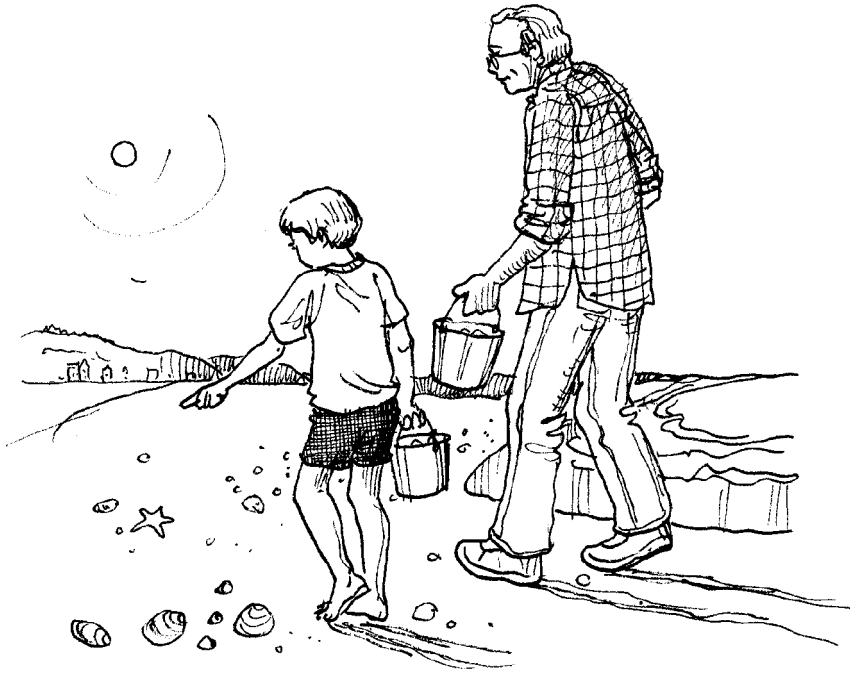
Sand Castles

I always looked for different ways to make my castles special. I used varying sizes of cups, buckets, spoons, shovels, garden tools, and toys to create wondrous castles big enough for sea gulls or small enough for ants to march through. Sometimes I made castles, hoping the ants in my bed would make it their new home. I settled for placing toy people in and around the castle once it was finished.

To make a sand castle, first I would smooth out a flat surface to support it. Next, I would dig up very wet sand, but not dripping wet, and pack it tight into a bucket mold. Then I would gently tap the sand out to form the base of my castles.

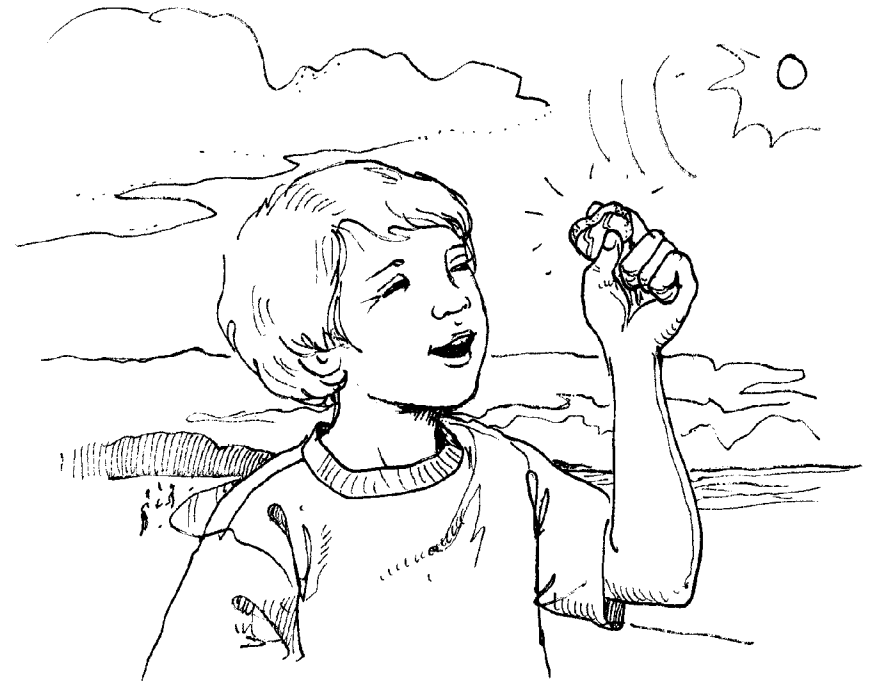
I added details by pressing wet sand together in my hands and smoothing it up into lookout towers, balconies, and protective walls. Sometimes I dug a deep **moat**, or ditch, around the castle and filled it with water. I often dripped watery sand on the edges to make fancy designs along the roof and down the walls. As a final touch, I would add shells, driftwood, seaweed, and sea glass that I had collected with Jim earlier in the morning.





Sea Glass

Sometimes Jim took me with him to walk down the beach and look for gifts from the sea. Jim called the treasures we found “gifts” because once in a great while he would find something very interesting. He had found pieces of metal or wood from ships, teeth from a big fish, and even coins. Jim especially liked to find sea glass, which he collected.

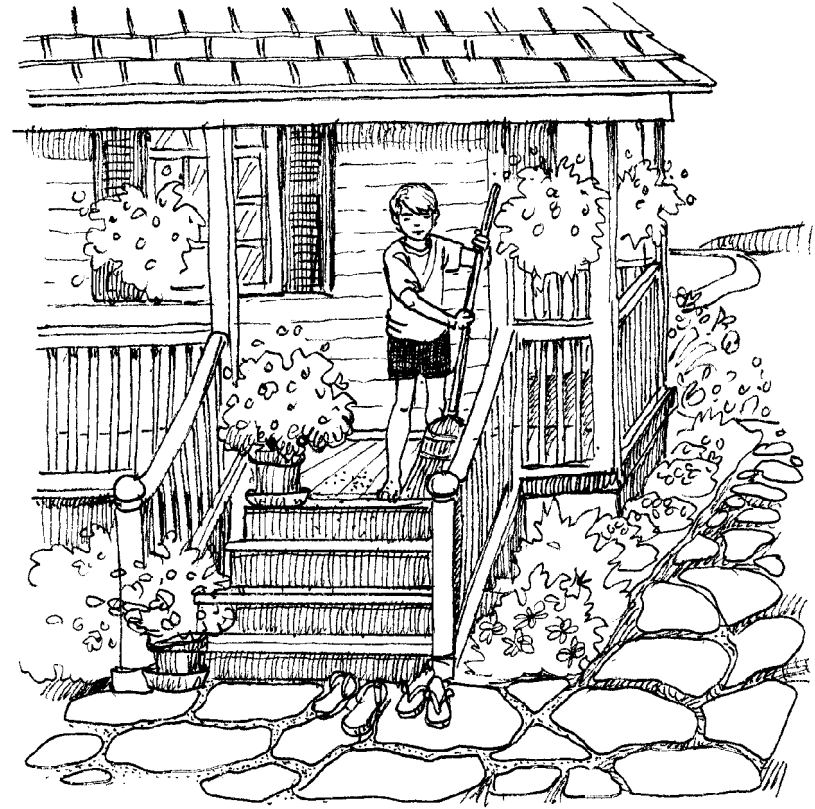
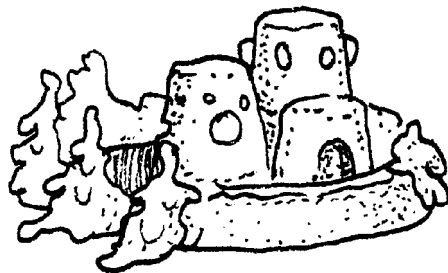


Jim told me sea glass is broken glass that has been worn smooth over time by the wind, waves, and sand. This makes the sharp edges rounded so they feel nice to hold. The little pieces of glass glowed brilliantly when the sun shined into them. Jim found most of his sea glass during low tide after a storm churned up the ocean. He said most of what washed in with the **tide** was from the early 1900s when people threw glass overboard from **steamboats**.

When I went with Jim to look for gifts we would sort through what we had collected before I built my sand castle that day.

Early in my visit, I had learned to ask Gram for the local tide reports in the mornings. She explained how I could listen for them on the radio, or read them in the local newspaper, too. I wanted to find out the best times for finding sea glass and for building my castles.

Much to my **dismay**, during high tide the incoming waves destroyed my castles—washed them right into the sea. Gram said that the tides, or the ebb and flow of seawater, is caused by the attraction, or pull, of the sun and moon. About every 12 hours I would say goodbye to that day's castle. Then I could start all over again, building different castles and trying out new ways to shape and decorate them.

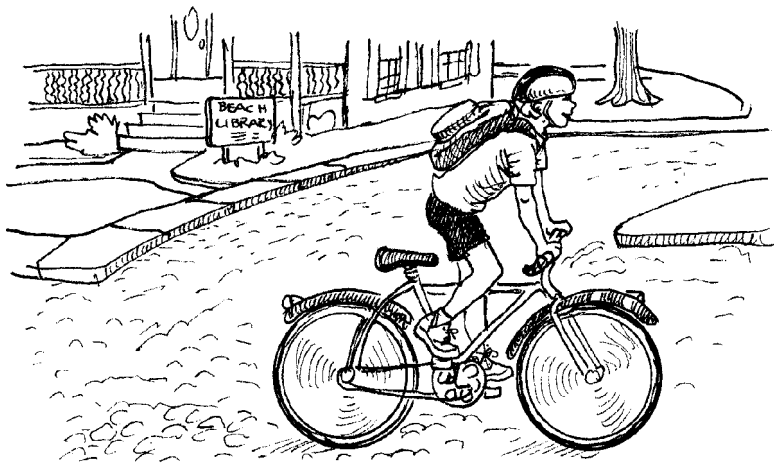


Visitors

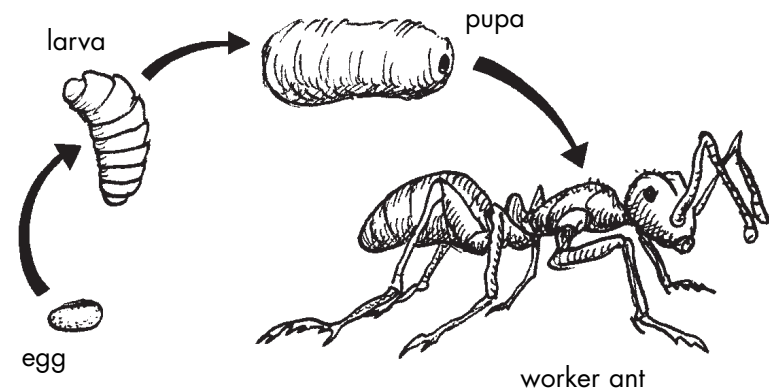
I was having a terrific summer. Gram gave me easy chores like making my bed, washing the dishes, and sweeping her porches. I was usually free to roam my part of the beach between two jetties, ride my bicycle, read books, make friends with visiting children, or explore the shops in town.

I had just one problem, and I didn't know how to solve it. I had ants in my bed. The ants didn't actually live in my bed. They just crawled across it. I seemed to be an **obstacle** in their path. Instead of going around me, they climbed over me! I wasn't sleeping well thinking of creepy, crawly ants skittering across me in the night.

I didn't want to smash or stomp or spray the ants. I just wanted them to crawl somewhere else. I went to the town's library and asked the librarian where I could check out books about ants to find a solution to my dilemma. I looked through many, checked out four, and headed back to Gram's house.



Ant Life Cycle

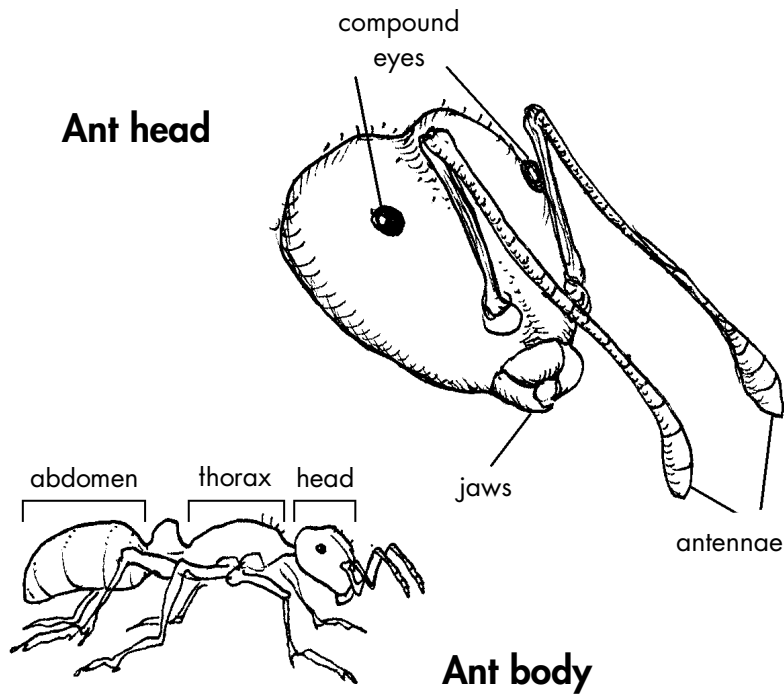


Ants

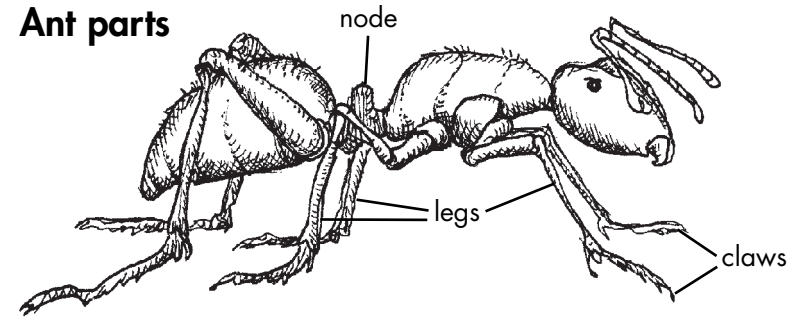
As I read, I learned that ants live in colonies, which may exist for many years. Each **colony** has at least one queen that lays eggs. In about 25 days, the eggs turn into **larvae**. In another 10 days, the larvae make white **cocoons** to cover themselves. Inside the cocoons, the larvae turn into ant-shaped **pupae**. Altogether, it takes almost 60 days for a new worker ant to be born. In just one colony, thousands of worker ants find food, build nests, and take care of the queen and her young. The book said ants eat a variety of food such as insects, seeds, and nectar, which is the sweet juice plants produce.

I found out that ants have three parts—the head, the **thorax**, and the **abdomen**. The head contains the brain, two eyes, the jaws, and the antennae. The eyes of an ant are called compound eyes because each eye is actually made up of many eyes. The jaws of an ant open and close like scissors. Ants use their antennae to hear, taste, smell, and communicate by touching each other.

This was all pretty interesting, but I still didn't know how to get the ants off my bed.



Ant parts

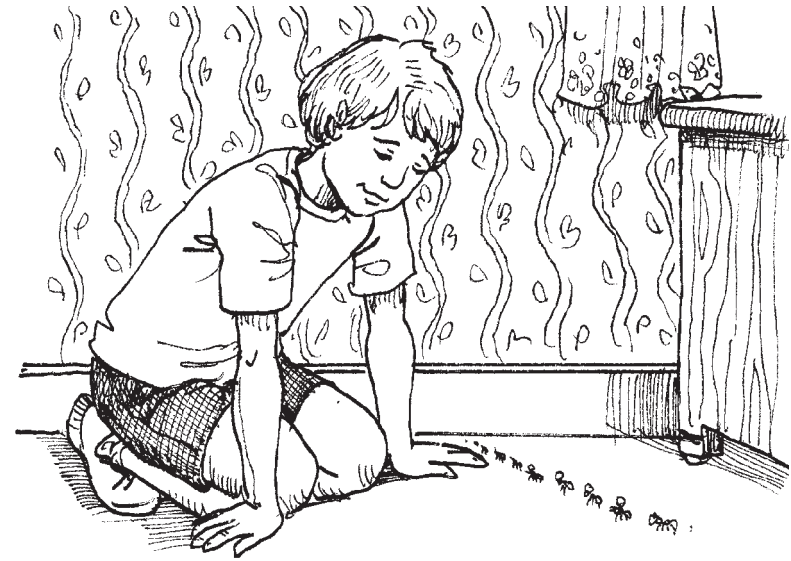
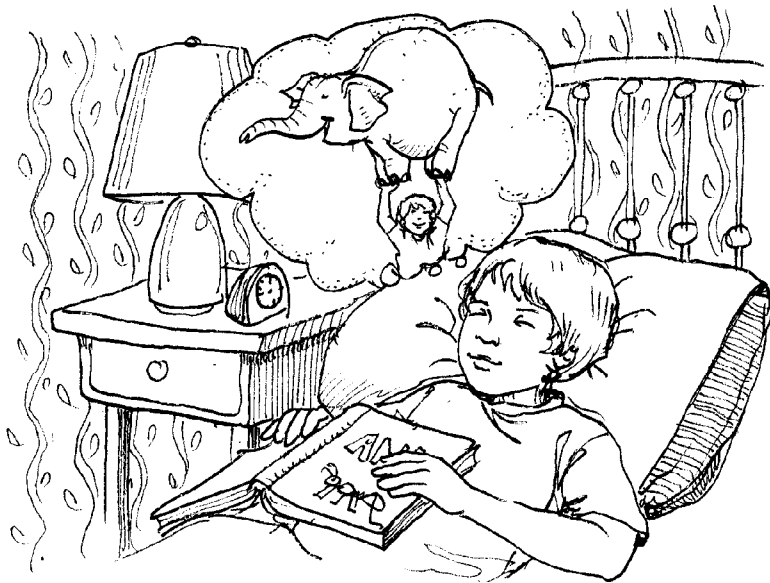


As I kept reading, I learned the thorax contains three pairs of legs. At the end of each leg is a sharp claw that helps the ant to climb up walls. An ant has such strong legs that if a man could run as fast as an ant, he'd be able to keep up with a racehorse.

The abdomen contains the stomach. Between the thorax and the abdomen are one or two bumps called **nodes**. Ants do not breathe as we do because they do not have lungs. They have holes all over their body, which take in oxygen and send out carbon dioxide.

Finally, I came to a part in one book that talked about how ants lay scented trails to find the way from their nest to food and back. I decided that the ants in my room must have laid a scented trail that went across my bed.

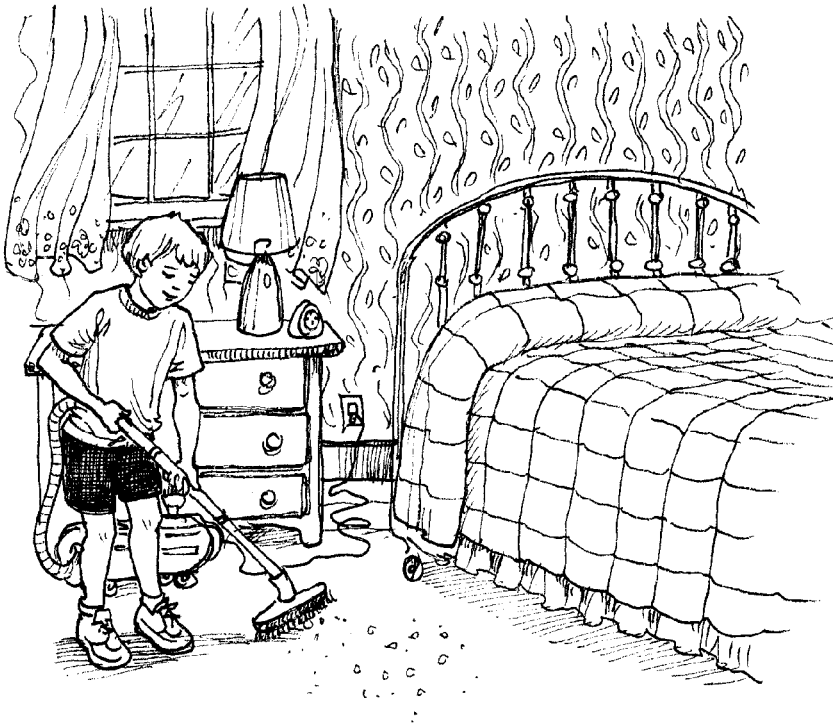
I knew I had to find their nest. I'd read it could be under a stone, under a log, or in a garden. Worker ants often come into houses looking for crumbs of food, especially sweet things. I thought I had been careful eating in my room, but Gram's yummy cookies, especially her peanut butter ones, did crumble. Ants carry food, such as cookies, to the nest after softening it with **saliva** and biting off a piece. I read that an ant can carry 20 to 50 times its body weight. I weighed 75 pounds. That meant if I was as strong as an ant, I could carry from 1,500 to 3,750 pounds!



The Search

I tried to follow the ants that were crawling into my room, to find where they were coming from and where they were going. I discovered they were finding crumbs on my floor and in my bed. Then, they were carrying the crumbs near the window, where they escaped between the woodwork and the wall. I went outside and tried to find them coming out of the house. I saw many ants, but none were carrying crumbs of cookies. Maybe they lived under the house! Maybe they lived in the walls! I decided I needed to confess to Gram.

I told Gram about the ants and even about the cookie crumbs. I also said that I did not want to hurt them, I just wanted to get them off my bed. I asked Gram if I could use her vacuum to sweep up the crumbs in my room. I also asked if I could move the bed. I cleaned my room, changed the sheets, and scooted my bed closer to the window. I vowed not to eat cookies in my room anymore. I wondered if this would end my ant problems.



As I lay in my bed that night, I thought about all of the ants that had been crawling in my room. I decided to ask Gram if I could put some honey on the ground under my bedroom window to feed the ants since I'd taken away their food source. I closed my eyes with a smile on my face. Then I heard some strange noises outside my window. I looked out and saw winged things flying around in the moonlight. These black, flying things seemed to swoop back and forth from the house. Oh, no! We have *Bats in the Attic!*



Glossary

abdomen	the rear part of an ant's body (p. 13)
cedar shakes	wood shingles cut from red cedar trees (p. 4)
cocoons (kah-KOON)	the silky covering around a larva during its change to an adult (p. 12)
colony	a large group of creatures that live together (p. 12)
dismay	to feel disappointment or sadness (p. 9)
larvae (LAHR-vee)	the first growth stage of ants and other arthropods (p. 12)
moat	a water-filled ditch protecting a castle (p. 6)
nodes	bumps or lumps (p. 14)
obstacle (AHB-steh-kehl)	something that gets in the way, preventing progress or movement (p. 11)
pupae (PYOO-pee)	insect stage between larvae and adult, during which the insects are in a cocoon (p. 12)
saliva	clear mouth fluid; spit (p. 15)
steamboats	a boat with a steam engine (p. 8)
thorax (THOR-aks)	the middle section of an ant's body between the head and the abdomen (p. 13)
tide	the rise and fall of the ocean produced by the gravity of the moon and sun (p. 8)

Appendix

Gram's Peanut Butter Cookies

Ingredients:

1 cup brown sugar	1 cup shortening or butter
3/4 cup white sugar	1 cup peanut butter
2 eggs	1 teaspoon vanilla
1/4 teaspoon salt	2 teaspoons baking soda
2 cups flour	1/4 cup sugar (to dip fork)

Instructions:

- ❶ Preheat oven to 350 degrees F.
- ❷ Mix together the brown and white sugars, butter or shortening, and peanut butter until creamy.
- ❸ Stir in the 2 eggs and mix well.
- ❹ Stir in the vanilla.
- ❺ Mix the salt and baking soda into the flour. Slowly add the flour mixture to the peanut butter mixture, stirring as you add it.
- ❻ Roll into golf-ball-sized balls.
- ❼ Press onto a cookie sheet with a sugar-coated fork. (Dip a fork into white sugar and press down on the cookie.)
- ❽ Bake at 350 degrees for 8 to 10 minutes.
- ❾ Cool on a rack. Yields about three dozen cookies.

NOTE: Please have an adult help you any time you use an electric mixer or the oven.

Name _____

INSTRUCTIONS: Fill in the top box with information you know. Record your questions before and during reading in the *Questions I Have* box. After reading, write in the answers you found in the *Answers I Found* box.

Information I Know	
Questions I Have	Answers I Found

Name _____

INSTRUCTIONS: In each sentence, write the correct form of the adverb shown in parentheses.
Then write a sentence using the adverb shown below.

1. (near) Gram lives _____ to the shore than Jim does.

2. (quickly) Gram pats the sand together _____ than I can.

3. (early) Jim walks on the beach _____ than we do.

4. (fast) On weekends the beach fills up _____ with tourists
than it does on weekdays.

5. (patiently) Jim removes the sand _____ than I do.

6. (close) We sit _____ to the water than they do.

7. (skillful) We know Gram is a _____ builder than I am.

8. (soon) She finishes her castle _____ than I do.

9. (carefully) Gram carves the castle _____ than I do.

10. (long) Your sentence:

Name _____

INSTRUCTIONS: Read the sentences. For sentences 1–4, write a synonym for each underlined word on the line under the sentence. For sentences 5–8, write an antonym for each underlined word on the line under the sentence.

1. Sand castles are made from wet sand packed tightly with your hands or a shovel.

Synonyms: _____

2. Good castle builders know to pack their sand firmly to make the castle stronger.

Synonyms: _____

3. Tools are important, but you can use almost anything.

Synonyms: _____

4. Rummage the house for spatulas, forks, spoons, straws, sticks, or combs.

Synonyms: _____

5. Even an old toothbrush makes a nice effect on the walls.

Antonyms: _____

6. When you have a tightly packed pile of wet sand, you can begin carving away.

Antonyms: _____

7. You will begin at the top and work down, making sure to only remove a tiny bit of sand at a time.

Antonyms: _____

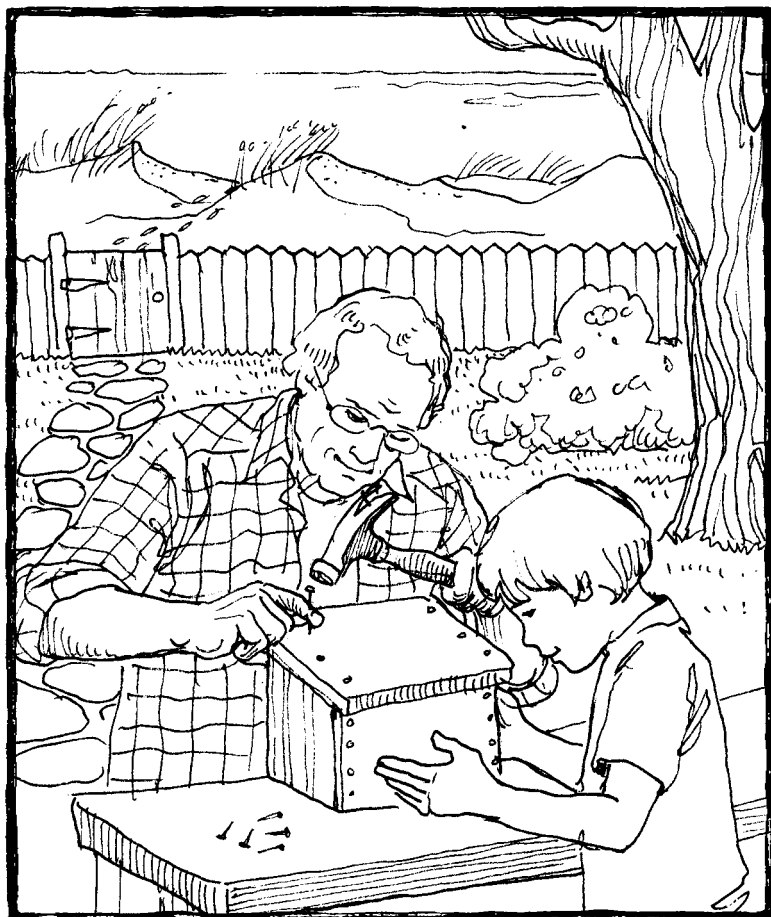
8. Enjoy your castle because soon the tide will come and take it into the ocean.

Antonyms: _____

Bats in the Attic

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Word Count: 1,755

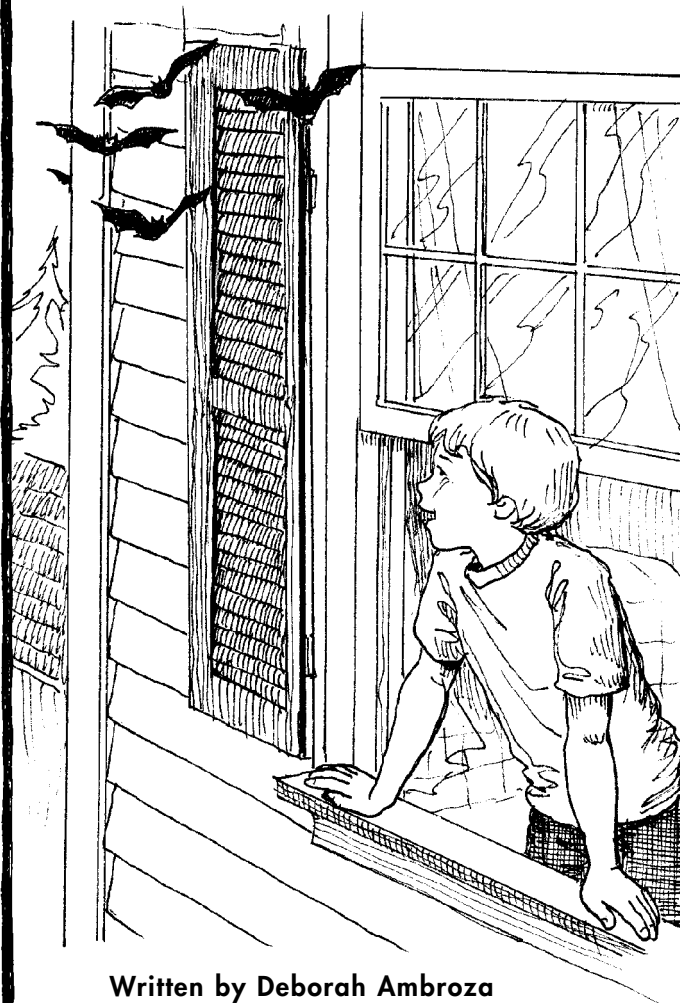



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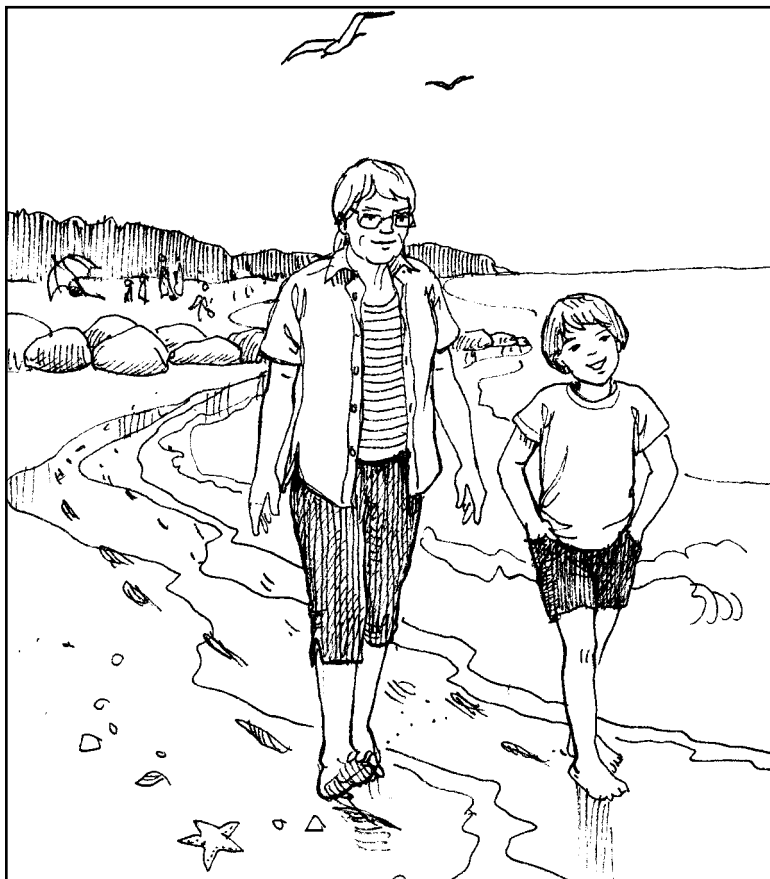
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Note about the series: *Bats in the Attic* is the third book in a three-part series written by Deborah Ambroza. The first two books in the series are: *Horseshoes Aren't Just for Good Luck* and *Ants in My Bed*.

Bats in the Attic
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Illustrated by Marcy Ramsey

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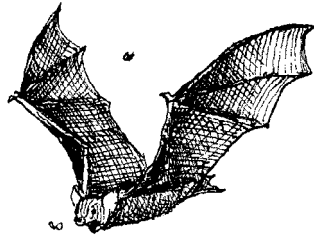


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Introduction

When I was nine years old, I spent the summer visiting my great-grandmother, whom I called Gram. She lived in a large gray cedar shakes house by the ocean. Gram let me pick which upstairs bedroom I wanted to stay in, so I chose the yellow one because its window faced the beach.

I had many adventures that summer, including ones with horseshoe crabs, sandcastles, and ants. My latest adventure began when I heard some strange sounds outside of my bedroom window. I looked out and saw winged creatures flying around the outside light. These brown, flying animals seemed to fly back and forth from the house. I thought Gram's house might have bats in the attic.



Research

I had never climbed up the steep stairs to the third floor, but Gram had told me it was her attic. The strange sounds outside made me curious about what was in that part of the house. I decided to tell Gram about the bats the next morning. I planned to ask her if Jim could go with me to see how the bats were getting into the house. Jim was Gram's friend who helped her with chores around the house. He often stopped by to visit.

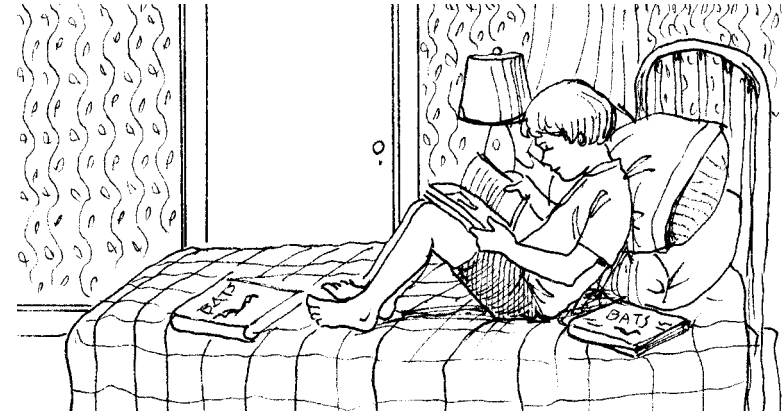
The next morning, while having a breakfast of oatmeal with lots of maple syrup, I told Gram what I had seen and heard the night before. Gram said she didn't think the bats were living in the attic but it would be a good idea to have Jim and me check it out the next time he came to visit. Gram suggested that I ride my bike to the library to read all I could about bats. I was surprised when she told me that she didn't want the bats to go away, but she didn't want them to live in her house either.





The town's library was small, and the librarian knew me from previous visits. That summer I had read books about sand castles, horseshoe crabs, and ants, as well as books about **tides** and the ocean. Now I wanted books about bats.

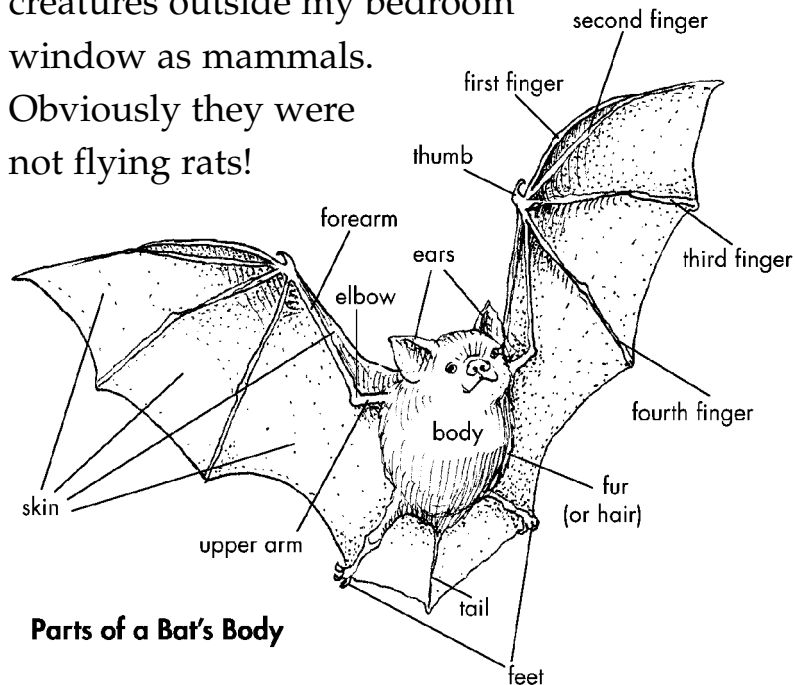
The librarian helped me find many books, and I sat down to look through them. Some books were too difficult, and some were too easy. I found three books that I thought would teach me what I wanted to learn, checked them out, and rode my bicycle home.



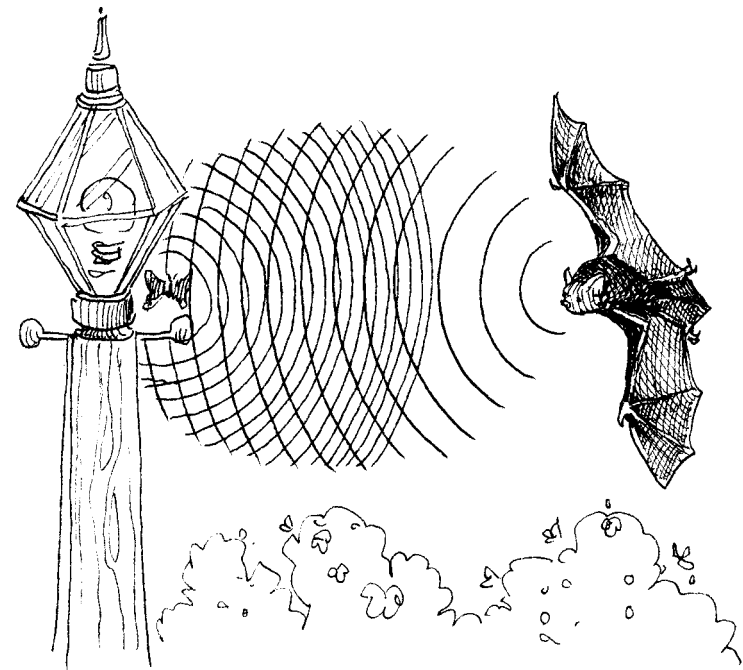
Blind as a Bat?

Bats are very interesting creatures. I learned that they are divided into two categories: megabats and microbats. Megabats can have a wingspan of six feet. Thank goodness the bats at Gram's were microbats, which are about the size of a hamster. Megabats live where it is warm all year, and they eat mostly fruit and nectar. Microbats live in many parts of the world and eat mostly insects. I was pretty sure Gram's bats were called *Eptesicus fuscus* (ep-TEAS-ick-us FUSS-cus), or big brown bats. Once I read further, I learned one bat could eat 600 to 1,000 mosquito-sized insects in an hour. Now I knew why Gram wanted to keep them near.

I first suspected bats were related to mice, but I read that bats are more closely related to humans. A bat's wing is like a human hand with four fingers and a thumb. The bat's arm has a forearm, an elbow, and an upper arm. Bats' fingers are long and have a double layer of skin connecting them. The skin is so thin you can almost see through it. Bats feed milk to their newborns, called **pups**, the same way other mammals do. Bats, like all mammals, have hair or fur on their bodies, are warm blooded, and have claws or fingernails. It was strange to think of those flying creatures outside my bedroom window as mammals. Obviously they were not flying rats!



Parts of a Bat's Body



I had heard the expression "*blind as a bat*" used by many people. In my reading, I found out that bats are not blind. They use their eyesight during daylight and early evening hours. At night, of course, they need more than sight to catch flying insects and to fly around without hurting themselves. They do this by using **echolocation**. A bat makes sounds from its mouth or nose that bounce off solid objects and echo back, which tells the bat the location of the object, including insects.

Searching for Bats

The next time Jim came for breakfast, I asked him if he'd go with me to look for bats in the attic. As we climbed the narrow, steep stairs, Jim told me not to touch any bats we found. I told him I had read that only a few bats have **rabies**, but humans still should not touch or frighten them. Jim was glad I had done some research. He said it was good we both knew what to do, and what not to do, to stay safe around wildlife.



The attic was full of old things, such as furniture, boxes, and old pictures. Jim shone a flashlight onto the ceiling, looking for bats. We also looked all over the floor for bat droppings. We found nothing. The bats had to be living in the walls.

In one of the books I had read, I learned how to remove bats from a house. The book said not to disturb bats during the summer months in case there were young pups that would not be able to follow their parents to a new home. Gram would have to wait a couple more weeks until September to take steps to protect her house against any more bats living in it. I gave her the book that explained how to keep bats out so she would know what to do.

I asked Jim to help me build a bat house. The bat house would attract bats so they would stay near Gram's house to eat insects. When we were finished, Jim fastened the bat house near the edge of Gram's roof where I had seen the bats coming and going at dusk. I hoped the bats would learn to live in the new home we made for them.



Clam Digging

My summer was coming to a close; Labor Day was just a week away. I loved living at the shore and was not ready to leave. I missed my family and friends in the city, but I wished we lived closer to Gram.

One evening, Jim and Gram told me they had a surprise for me. The next day we were going to go clam digging. There was a full moon that night, which meant the tide would **ebb**, or pull away from shore, farther than usual. In the morning we would be able to dig clams that were normally covered by the ocean. We would need to leave Gram's house by 6 a.m.

Gram, Jim, and I had a quick breakfast of cereal and orange juice. We had a short drive to a **secluded** beach. When we arrived, Jim handed me a wire bucket and a jug of water. He carried a potato hoe that looked like a rake with six long **tines**, and a big iron kettle. Gram carried a blanket and a picnic basket.



Gram and Jim showed me which **dimples**, or holes in the sand, should yield clams. Jim would find a dimple, put the hoe on the ocean side of the clam and push down, gently bringing the sand out. It was my job to grab the clam and put it into the bucket.

Clams dug down deeper into the sand to escape, so sometimes Jim had to keep digging. Clams also defended themselves by shooting a stream of water out of the hole as we stepped near them.

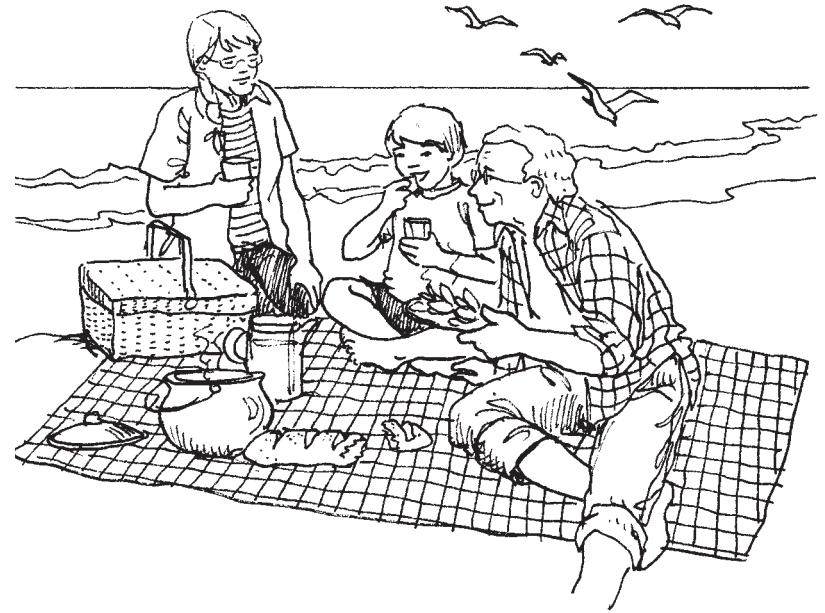
After a while, Jim handed me the hoe to try clam digging. I could not dig fast enough at first, but when I uncovered my first clam I was high-fiving Gram and Jim with happiness! Gram would swoosh the bucket of clams in the ocean water to remove sand from their shells.

Sometimes sea gulls would see a clam's **snout** near the surface, grab it, and fly off with it for a meal. I shooed the gulls away when they came too near to our digging. Gram told me that we might dig up a few **bloodworms**, as their holes in the sand look very similar to clam holes. I was very glad we didn't find a bloodworm that day; they can give humans nasty bites.



Bon Appétit!

Once we had collected quite a few clams, Gram and I looked for **driftwood**. We were at a private beach where we were allowed to build a fire. When we had our arms full of all sizes of wood, we headed back to Jim. He had the bucketful of clams and was washing the last ones in the ocean. Gram put the clams into her kettle and poured the jug of water over them to remove as much sand as possible. Jim built the fire, poured the water off the clams, and set the kettle atop the fire to cook. As the clams steamed, Gram sat on the blanket watching Jim and me make a sand castle.



Gram called us when the clams opened their shells. She put some salt, pepper, and butter on them. They were a grayish color when we dug them. Now cooked, they were almost white. Gram put one on a plate and showed me how to remove the skin on the snout. Then she gave it to me to eat.

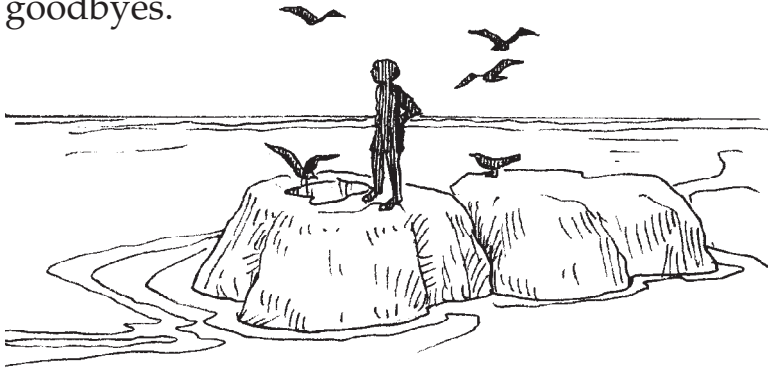
“Bon appétit,” said Jim. **“Enjoy!”**

The clams were delicious. With fresh bread and ice-cold lemonade, this was the best meal I had ever tasted.

Goodbyes

Gram, Jim, and I went for a long walk on the beach and **waded** along the shore after our lunch of delicious clams. I was feeling sad that I would soon be taking the train back north to the city and home. Gram noticed that I was unhappy. She gave me a hug and told me not to worry. “You’ll be back soon—now that you have sand in your shoes.”

Sea gulls kept flying to a pair of huge rocks nearby. Jim helped me climb to the top so I could see what the birds liked so much. On top, I found a small pool of water. I felt very tall standing on the rock. I could see far out into the ocean and up and down the beach. This was a perfect place for sea gulls to perch. This was a perfect place for me to say my goodbyes.



Glossary

bloodworms	worms found in tidal areas that can be up to 15 inches long (p. 16)
Bon appétit (bone-na-pah-TEE)	French expression meaning “good appetite” or “enjoy your meal” (p. 18)
dimples	an indentation on a surface (p. 15)
driftwood	pieces of wood found washed up from the tide on a beach (p. 17)
ebb	the movement of the tide away from the beach (p. 14)
echolocation (EK-o-low-ka-shen)	the process of locating objects by bouncing sound waves off of them (p. 10)
Eptesicus fuscus	big brown bats found all over the world (p. 8)
pups	very young bats (p. 9)
rabies	a deadly disease caused by a virus that is usually passed on through the bite of an infected animal (p. 11)
secluded	hidden away, with few people around (p. 14)
snout	the nose and mouth of a clam (p. 16)
tides	the rise and fall of the ocean occurring about every 12 hours (p. 7)
tines	prongs, like the points of a fork (p. 14)
waded	walked in the shallow water on the edge of the beach (p. 19)

Name _____

INSTRUCTIONS: In the first column, write what you already know about bats. In the second column, write what you would like to learn. After you finish reading, fill in the third column with what you learned from reading *Bats in the Attic*.

What I Know

What I Want to Know

What I Learned

Name _____

INSTRUCTIONS: List the steps involved in digging for and cooking clams (1–15). You may refer to *Bats in the Attic* as necessary.

1. Find out when there is a full moon and when the tide will be out.
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. Bon Appétit!

Name _____

INSTRUCTIONS: Underline the simile and circle the signal word. Write what two things are being compared.

Underline the simile and circle the signal words.	Tell what is being compared.
1. His thick glasses told us he was <u>as</u> <u>blind as a bat</u> .	being nearsighted/bat
2. I rode my bike as fast as the wind to the library.	
3. Some bats' wings are as wide as a man.	
4. Big brown bats are like a mosquito zapper.	
5. The wing of a bat is like a human hand.	

BATS IN THE ATTIC • LEVEL T • 3

Underline the metaphor.	Tell what is being compared.
6. I looked up to see the <u>giant, cold,</u> <u>metal claws</u> descend into the sand.	giant, cold, metal claws/potato hoe
7. I shot a water bullet at the clam digger.	
8. I was trapped in the metal claws.	
9. I was tossed into a wire prison with the other hostages.	
10. The flames licked the sides of my prison.	

SKILL: SIMILES AND METAPHORS

Adventures with Abuela

A Reading A-Z Level T Leveled Reader

Word Count: 1,771




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Adventures with Abuela



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Special Delivery

It was late afternoon in Kanab, Utah, when Adriana Cruz ran inside. Holding a large envelope, she exclaimed, "It's the letter from Abuela!"

Her brother, Rob, looked up from the book he was reading. "Get Mom and Dad!" he said. "They'll want to open it right away."

Their little sister, Emily, put her hands on her hips, looking **puzzled**. "Abuela sends us stuff all the time. What's the big deal?"

Adriana explained, "This is a special letter. It contains **clues** to an **adventure**!"

"Clues?" Emily asked.

"Remember, in her last email Abuela told us she was going to send us clues about our vacation," Rob said.

"That's no **mystery**," Emily said. "Mom and Dad already told us we're going to Abuela's house."

"But we have to solve a mystery on the way there," Adriana explained. "And this has the clues."

Their parents walked into the living room. "What's all the buzz about?" Mr. Cruz asked.

"The letter from Abuela is here!" the children exclaimed.

"We're leaving Kanab tomorrow so it came just in time," Mrs. Cruz said.

The family gathered to read the letter.

Dear family,

I am taking you on a wonderful trip. Let's see if you can figure out where we are going. I have sent you clues.

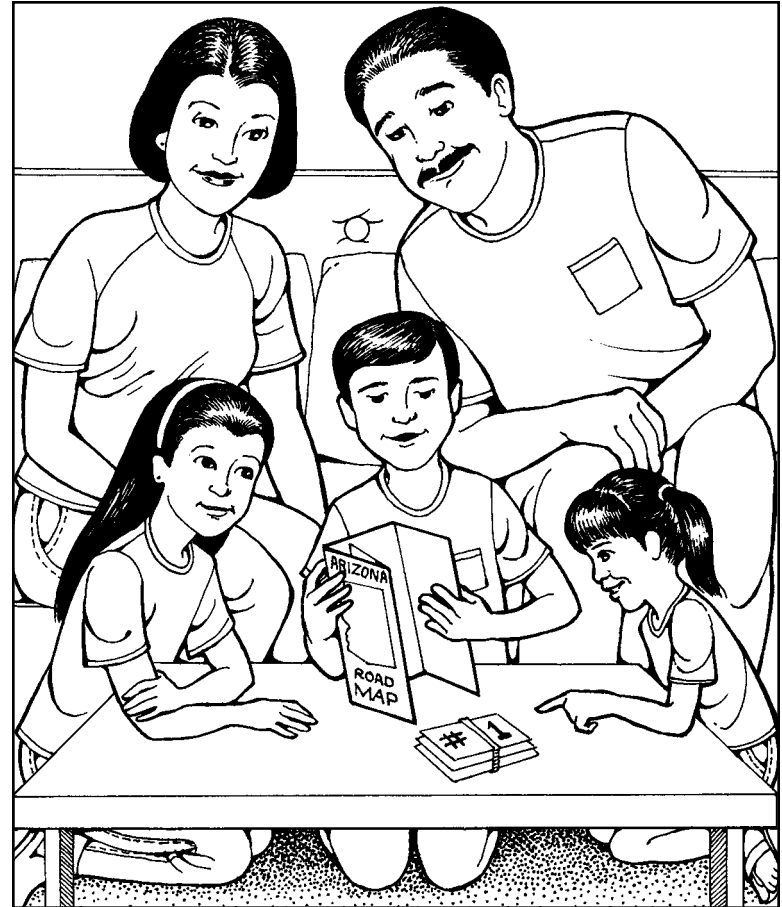
As you drive, use the clues to try and figure out where we will meet.

I will give you a hint: All the answers to my clues can be found on an Arizona map.

The clues are found in smaller envelopes. You may open each clue as you solve the one before it. You may now open the first clue.

Good luck, and I hope I am not sitting at the meeting place alone!

Love, Abuela



CLUE 1: Books and Scrambled Letters

"Look! She included a map." Rob said, unfolding it on the coffee table.

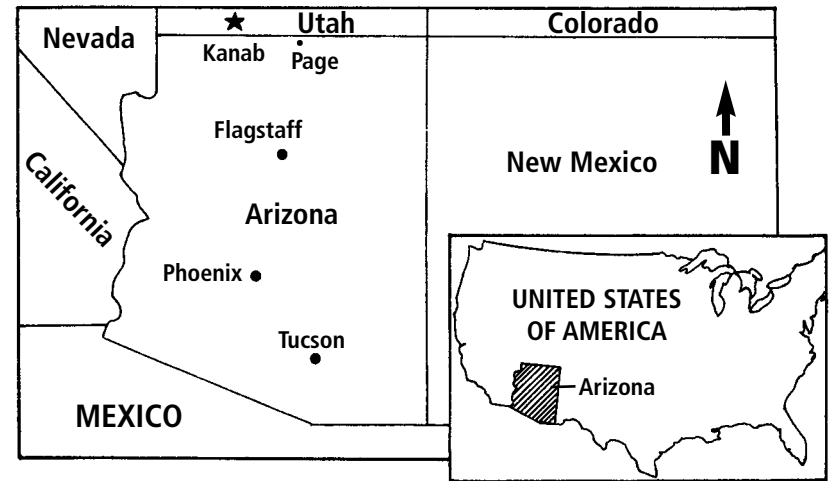
"I think these are the clues," Emily said, pointing to a bunch of envelopes held together with a rubber band.

Mr. Cruz held up a sealed envelope. "We are supposed to open this one first," he said, as he opened the envelope. He pulled out the paper and read:

Clue 1
To begin our vacation game
go to the city with a name
that tells a common part
of each and every book.
When you get to the city, "SHOUT!"
Then unscramble the letters in <i>shout</i>
to tell you which <i>direction</i> to take.

Emily said, "Let's look at the map. Abuela said all the answers were on the map. If we look at the map maybe we can find a city that is part of a book."

"Hmm," said Adriana, "I think it might be easier to list the parts of a book. I think there are fewer parts of a book than there are cities in Arizona."



"Great idea!" exclaimed Rob, and he started making a list. "Let's see, there are covers, a table of contents, and page numbers . . ."

"Pages! All books have pages but they might not have a table of contents!" said Adriana.

"Great! Let's see if there is a Pages, Arizona, on the map," said Rob.

"There's not Pages, but there is a Page, Arizona! It is in the northern part of the state, almost in the center," stated Adriana.

"Well, then that is where we will drive tomorrow after we have had a good breakfast," said Mrs. Cruz.

CLUE 2: Names and Paintings

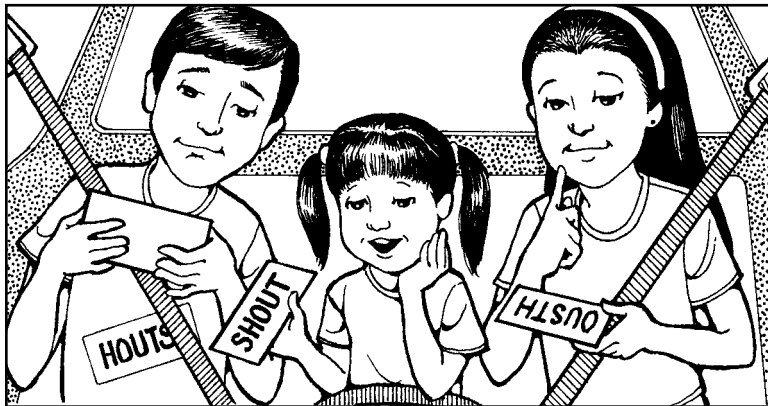
The next morning, an hour after an early breakfast, they rolled into Page and gave a loud SHOUT.

"Now we have to figure out what direction to go using the letters in the word shout," said Rob.

"Well it shouldn't be west because we just came from there, and Abuela wouldn't send us back in the same direction," said Adriana.

"You sillies. It's south! You just move the *h* to the end," cried Emily.

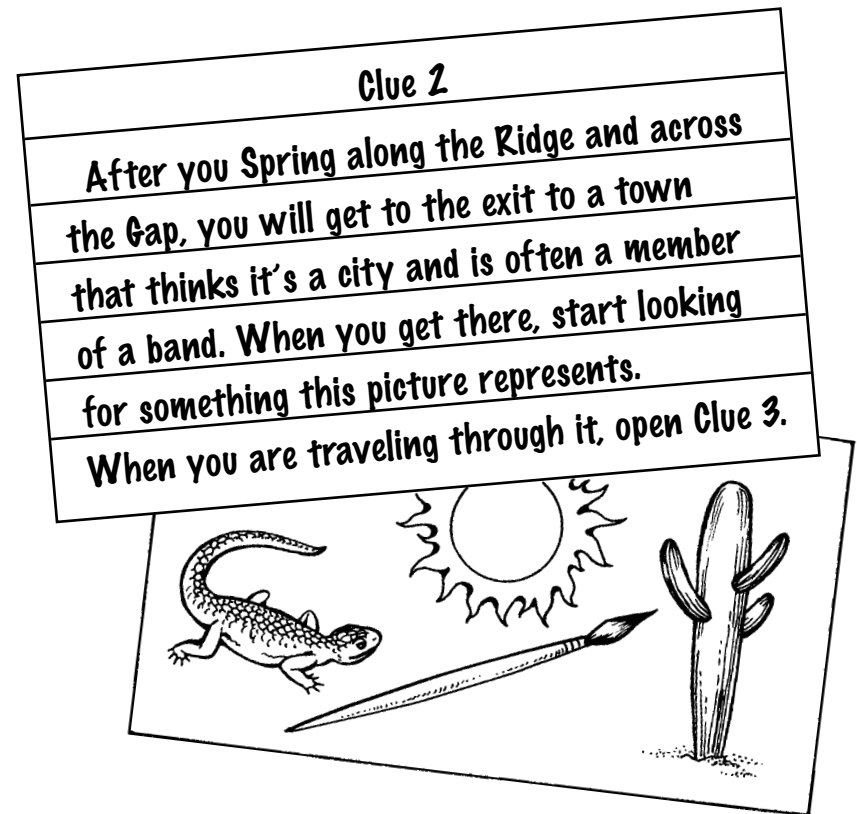
"Hey, don't we get to open the next clue now that we are in Page?" remembered Dad.



Mom opened the next clue because Dad was driving. Mom read, "Clue 2. You should be in Page, Arizona and traveling south."

"Yeah!" cheered the Cruz children. "We were right."

Mom continued reading.



"It's a drawing of a paintbrush and a cactus," Adriana said, "but what does it mean?"

"Let's look at the map. I don't see any cactus, and certainly there are no paintbrushes. Read the clue again, Mom," asked Rob.

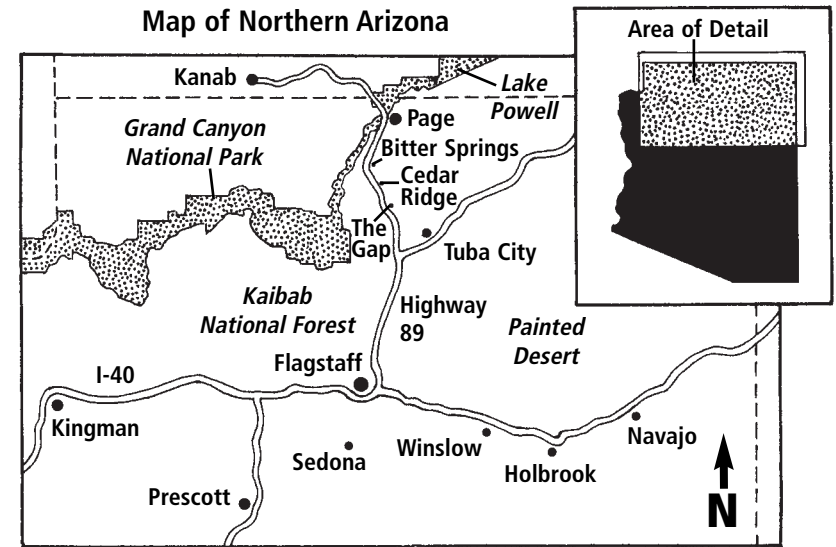
Mom read the clue again and said, "Oh, I just noticed that Spring, Ridge, and Gap are all capitalized. That means they might be the name of something. All place names are capitalized."

Adriana opened the map. "Here it is! Highway 89. We are supposed to drive south on Highway 89!"

"Let me see," said Rob as he grabbed the map. "Look Highway 89 goes through Bitter Springs, Cedar Ridge, and The Gap—places just like Mom thought."

"Good, then 89 must be the right road," said a relieved Dad. "What about that town that thinks it's a city and is often a member of a band. What the heck does that mean?"

"Hmm," said Rob. "I've got it! It's Tuba City. I see from the map legend that Tuba City is really a town, and I know that tubas are musical instruments in bands."



CLUE 3: Towns and Flags

Several hours passed as the children searched every billboard, sign, and building along Highway 89 for something that matched the drawing. They had passed the exit to Tuba City and were starting to get nervous.

"Maybe we missed it," said Adriana.

"I don't think so," said Mom, "but just look out the window. Aren't these rocks beautiful? It's almost as if someone painted them with a rainbow."

"Painted with a paintbrush?" asked Emily.

Just then Adriana saw a sign “**Painted Desert.**” “That’s it!” she cried. “Emily, you are a genius! Paintbrush and cactus—we are in the Painted Desert. Mom, open the next clue and let’s see if we are right!”

Mom read:

Clue 3
You should have passed Bitter Springs, Cedar Ridge, The Gap, and the Tuba City exit. Now you should be traveling along the Painted Desert.

The children all screamed, “Yes!”

Mom continued.

Your great-grandmother recited this poem in school when she was a child. When you reach the Arizona city it reminds you of, call me on the phone.

O Flag of Our Union
O flag of our union, to you we’ll be true,
to your red and white stripes, and your stars on the blue;
the emblem of freedom, the symbol of right,
we children salute you, O flag fair and bright!

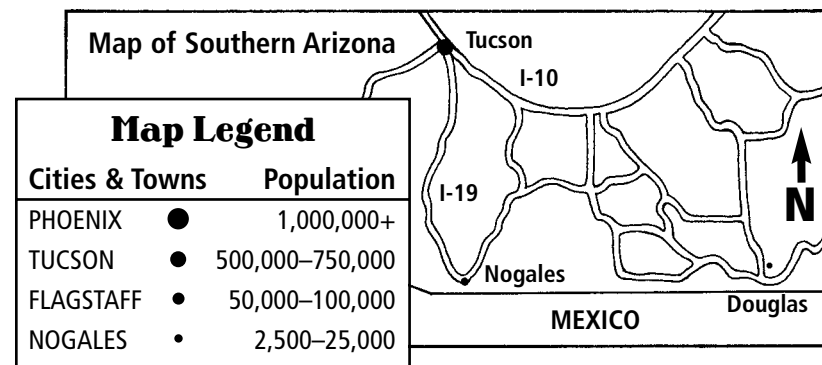
“Oh, man. It’s all about a flag. Where are we going to find a flag in the middle of the desert?” moaned Rob.

“I’ve seen flags at gas stations,” stated Emily.

“Yeah, but a gas station isn’t a city. Abuela said when we get to the city the poem reminds us of, to call her,” said Rob.

“I know,” said Adriana. “Remember, Abuela also said that all the clues can be found on the map. Let’s look at the map and find the cities. Maybe if we read the city names we can find one that reminds us of a flag. Cities have bigger dots on this map than towns.”

The children looked for all the cities on the map, Phoenix, Tucson . . . “FLAGSTAFF!” they shouted. “Dad, quick, drive to Flagstaff!”



CLUE 4: More Letters and Quarters

They drove to a rest stop near Flagstaff, and Dad called Abuela on his cell phone.

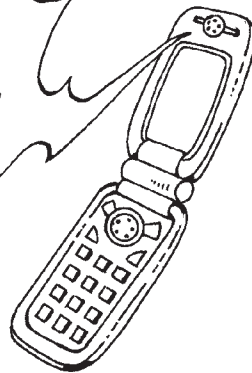
"Wow, you have done a great job! I hope you're in Flagstaff," said Abuela over the phone. "Put me on the speakerphone so everyone can hear."

Hi everyone. Here is Clue 4.

Unscramble the letters in Clue 3 that chose not to join.

Go two hours east on Interstate 40.

And meet me at the head of Washington's coin.



"See you in two hours!" Abuela said.

"Bye, Abuela!" the children shouted.

"I guess we need to pull out the map again," said Rob.

"And don't forget Clue 3," said Emily.

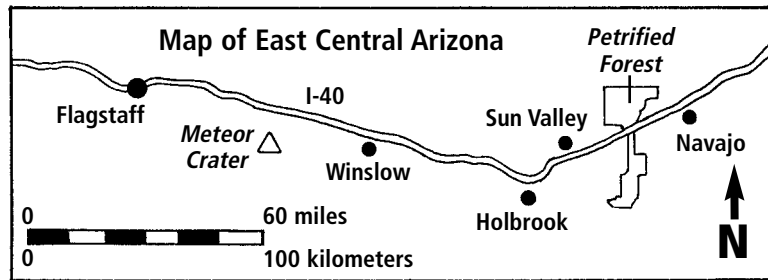
The children saw that some of the letters were different from the other letters in Clue 3. They figured that those were the letters that didn't join. But when they listed the letters, *F, i, e, t, d, i, P, r, o, e, e, r, s, f, t*, they didn't make sense.

Then Adriana remembered that Abuela had said to unscramble the letters. So they each played with the letters. They scrambled and unscrambled them as Dad drove.

They had made Peter Fest, and Free Poets but nothing was making sense. Then Dad reminded them of the map.

"We are driving two hours east on I-40. Maybe you can use the **scale of miles** on the map to figure out how far two hours driving would be and see if something near that spot has the letters you listed."

F, i, e, t, d, i, P,
r, o, e, e, r, s, f, t
fried
Peter
poets
red



"Well, it's about 60 miles from Flagstaff to Winslow," said Rob.

"That means it is about an hour because cars travel about 60 miles an hour. Another hour, or 60 miles from there, puts us at a place called the **Petrified Forest**," said Adriana.

"That's it!" cried Rob. "Abuela is meeting us at the Petrified Forest. That has all the right letters."

"But according to this map the forest is huge! How are we going to find Abuela in a forest?" cried Emily.

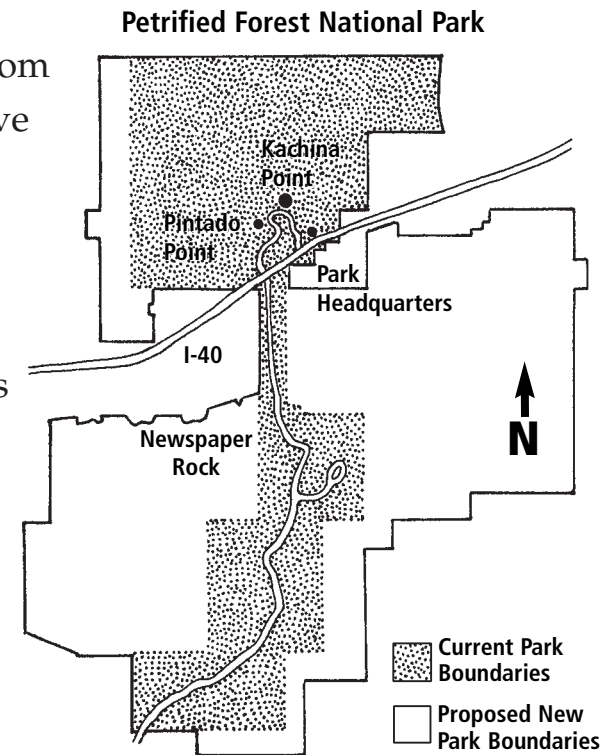
"She said to meet her at Washington's head," Adriana remembered. "Maybe there's a statue there. Wait, didn't she say something about a coin? Washington's head is on a quarter, isn't it?"

"Quarters are even smaller than heads!" cried Rob.

"Well," Mom said, "I believe Abuela's words were '*at the head of Washington's coin.*' Perhaps you need to look at the map again."

Adriana read aloud the spots labeled inside the Petrified Forest, "Pintado Point, Kachina Point, The Park **Headquarters**, and Newspaper Rock."

"Wait!" cried Rob. "That's it! The Park Headquarters—we will meet Abuela at the Park Headquarters inside the Petrified Forest!"



Soon the Cruz family pulled into the parking lot at Petrified Forest Park Headquarters. The children scrambled out of the car. They found Abuela cheerfully talking to a park ranger.

"There's my family now," said Abuela. "I thought you'd never get here!"

"Never? That was the shortest drive ever!" said Emily.

"Well, let's go find out about Petrified Forests," said Abuela.

The Cruz family knew they were off on yet another adventure with Abuela.



Glossary

adventure	an unusual experience (p. 4)
clues	pieces of information or objects that help solve a puzzle (p. 4)
direction	the path or line along which something moves, lies, or faces, such as north, south, down, or up (p. 7)
head	the side of a coin considered the front, often shows a person's face (p. 15)
headquarters	the main office of an organization (p. 18)
map legend	a group of symbols and brief descriptions on a map (p. 14)
mystery	something not explained or solved (p. 4)
Painted Desert	a desert on a plateau in north central Arizona, famous for the bands of color created by eroded layers of sediment, mud, and volcanic ash (p. 13)
Petrified Forest	a national Park in northeast Arizona with fossilized logs (p. 17)
puzzled	to be confused (p. 4)
recited	to have said aloud from memory (p. 13)
scale of miles	a series of marks on a line used to measure distance on a map (p. 16)

Name _____

INSTRUCTIONS: In the first column, write what you know about treasure hunts and using them to solve problems. In the second column, write what you would like to know based on the clues in the book. In the third column, write what you learned from reading the book.

What I Know	What I Want to Know	What I Learned

Name _____

INSTRUCTIONS: Abuela has arranged to have her family learn about the Petrified Forest. Add the missing quotation and punctuation marks in each paragraph.

We are going to hike along the Giant Logs Trail in the Rainbow Forest said Abuela. We will meet a park ranger at Rainbow Forest Museum.

Hello! I am Ranger Cheryl, your park ranger for this hike. We have some rules to learn before we leave. If you pick up petrified wood, rocks, sticks, or anything else, remember that you must return it. Ranger Cheryl continued as we walked from the museum.

We are allowed to pick up and touch the items, right? asked Adriana.

I will tell you which items you may touch answered Ranger Cheryl. Some areas, such as the petroglyphs, can be damaged by human touch.

What is a petroglyph asked Emily.

It is a design carved into hard dark rock Ranger Cheryl said We think petroglyphs were carved by the Ancestral Pueblo People, who left this area more than 550 years ago.

Name _____

INSTRUCTIONS: Circle the homophone used on the specified page in *Adventures with Abuela* in the *Homophone* column. Then write a sentence of your own using the homophone.

Homophones are words that are pronounced the same as another word(s) but have different meanings and sometimes different spellings.

Homophone	Page	Homophone used in a sentence
to, too, two	4	<i>We're going to Abuela's house.</i>
way, weigh	4	
there, their, they're	5	
here, hear	5	
won, one	7	
where, wear	8	
hay, hey	9	
right, write	10	
to, too, two	15	
wood, would	16	
I, eye	18	
meat, meet	18	

Sally's Secret Ambition

A Reading A-Z Level T Leveled Reader

Word Count: 1,552



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The United States of America during the Civil War (1861-1865)

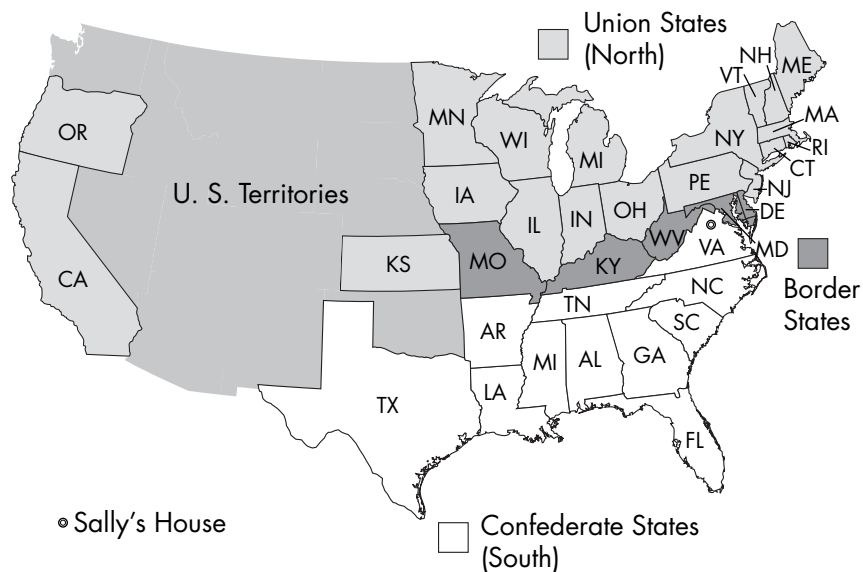


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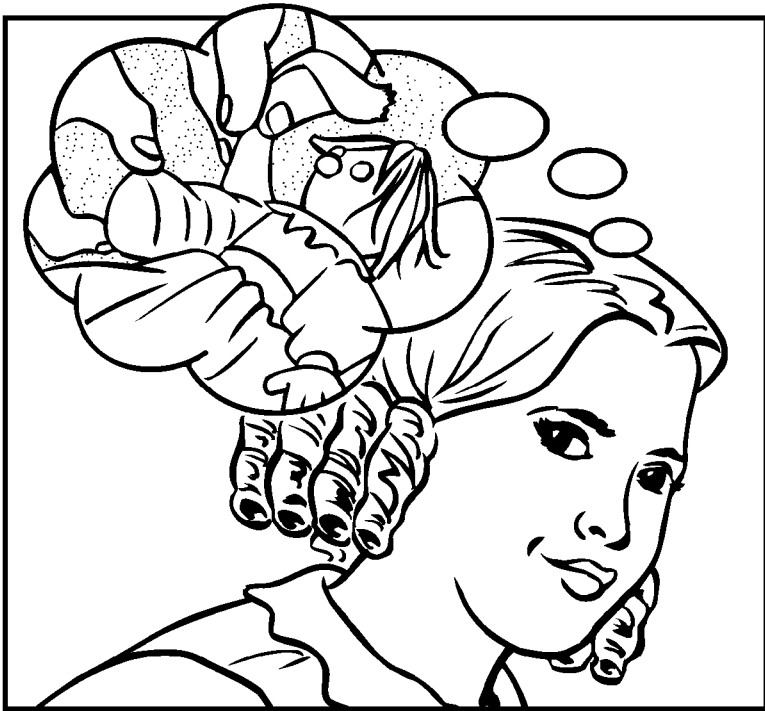
Chapter One

The **War Between the States** had begun last year. The North was fighting the South. Fathers were fighting sons; brothers were fighting each other. Sally was thankful as she set the table that her family had not been torn apart by this terrible war.

Sally could smell the bacon cooking in the kitchen. She knew that she and her family were lucky. They had enough food to eat. Other families did not. The prices for food had gone way up when the war started.

Many families had already lost sons and brothers to the war. Sally was thankful that her father and brother had not gone to fight.

Sally's father was a **surgeon**. He took care of soldiers who were hurt fighting in the war, and Sally's brother Alexander helped him. Sally wanted to help her father, too. She had watched him closely over the years. She practiced what she learned by bandaging wounds on her dolls. Now she could help injured animals. But her mother discouraged her interest in being a doctor. She would say, "I need your help at home. Besides, no man wants a surgeon for a wife."



Sally finished setting the table for breakfast. Her mother brought in the food and put it on the dining table. Sally rang a small silver bell to let her father and brother know that breakfast was ready.

"Good morning, Sally," said her father as he walked into the dining room. *He didn't look as if he had been up for hours operating*, thought Sally. Her father seemed to love his work even though it was difficult. With the war, his work had him awake at all hours of the day and night.

Father gave Sally a kiss on the forehead before taking his seat at the head of the table. "What a lovely breakfast, Virginia," he said to his wife as he served himself. Then he passed the eggs to Alexander.

"Thank you, Father," said Alexander, "but I don't think I can eat this morning."

"Are you ill?" asked Virginia. Sally saw the worry on her mother's face. Their neighbors had lost their baby to illness earlier that year, and Sally's mother feared the worst when someone in their family became ill.



"The boy's not ill, Virginia," Sally's father said in a booming voice. Then he chuckled. "I'm afraid our son still cannot stand the sight of an operation," he said. "He almost fainted early this morning at the **field hospital** while I was working on a boy's badly wounded leg."

Alexander got the chance to do what Sally dreamed of doing. But Alexander wanted to be anything but a surgeon. Sally's anger had risen when she realized that. It was not fair. Sally dreamed that one day she would help people as her father did. But she kept that dream a secret. She knew her mother would dig her heels in and say, "No man would want a doctor for a wife and that's that."

Chapter Two

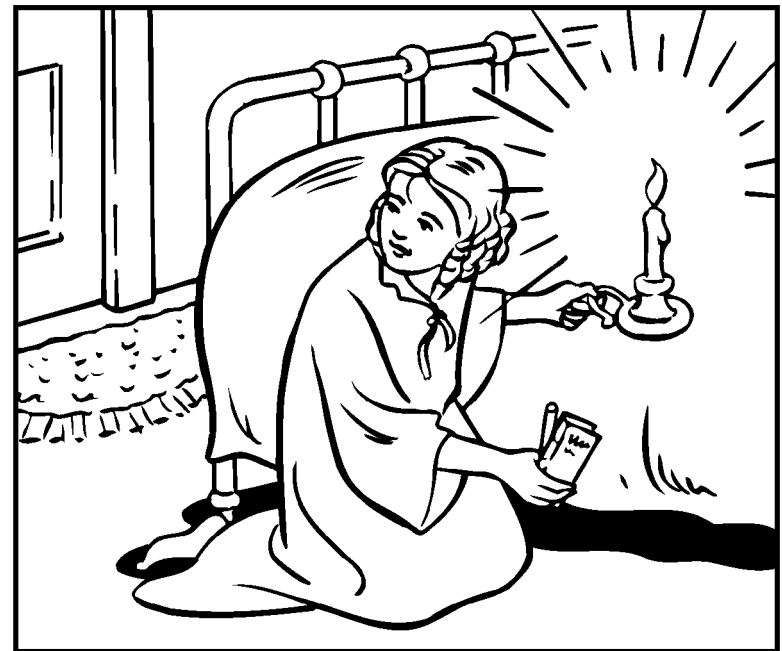
After breakfast, Sally cleared the table and washed the dishes. Then she dusted the books in her father's study. She knew all his books by heart. When she was young, her father let her look at the pictures of the human body. He taught her the names of all the bones and organs. As Sally got older, her free time was spent sneaking into the study to read his books again and again. She hoped that one day she could persuade her parents to let her help at the field hospital. She just had to think of a way to do it, otherwise her life's **ambition** might have to remain a dream.





Sally had been secretly watching her father do operations. She hid so he would not know she was there. At first, the sight of blood had upset her. But she reminded herself that her father was saving a life. Being able to save someone's life seemed **noble** to Sally.

Sally watched her father's operations from her secret hiding place in a closet. She snuck away from her chores every chance she got. She feared getting caught sneaking around. She did not want to upset her mother. She wanted to respect her wishes, but becoming a doctor was important to Sally. When the day came for Sally to persuade her parents, Sally wanted to be ready for it. Sally continued watching her father, and wrote down what she saw him do in a secret notebook that she kept hidden under her bed.



Chapter Three

One afternoon, Sally was alone at home doing the laundry. Her mother was at the home of a neighbor, helping other women make bandages from old sheets.

Sally heard cannon shots in the distance. *Another battle*, she thought. More wounded soldiers. She pictured her father and brother working at the field hospital, **tending** to the wounded soldiers.



Sally gathered up the clean, wet clothes from the laundry tub to take them outside to the clothesline. The clothes were piled so high in her arms that she did not see the soldier coming toward her. She nearly jumped out of her skin when he called to her. Startled, she dropped the clean laundry on the ground.

The soldier was wounded, but the cut was not too deep. Sally saw that blood was soaking through the sleeve on the soldier's uniform. She ripped one of the sheets and wrapped it tightly around his wound to stop the bleeding.



"Please, could you help my friend, John," begged the soldier. "He got shot in the leg."

Sally ran into the house and grabbed her father's spare medical bag. She took the ripped sheet and got some water from the well, then followed the soldier down the road. As they hurried along, the soldier introduced himself. His name was George, and he was not much older than Sally.

George's friend was not far away. John was sitting against a tree, his leg bleeding badly. Sally gave the boy some water, then turned to treat his wound. She washed away his blood with the water, but the blood swiftly covered the wound again. She saw enough to know that a **lead** bullet was not very deep in his leg.

Sally tore a bandage from the sheet, then took the forceps from her father's bag. She gripped the end of the bullet with the forceps and pulled it from John's leg. Next, Sally quickly wrapped the bandage tightly around the wound to stop the bleeding. The pressure from the bandage would keep him from losing too much blood and becoming unconscious.

Once Sally was sure the bleeding had slowed, she would have to take the boy to her father.

George watched Sally work. "You bandaged his leg as well as a doctor would have," he said, impressed with Sally's skill. "Where did you learn to do that?"

"My father is a surgeon," said Sally.

"He must be very proud of you," said George. Sally hoped so, but she knew her mother would be angry if she found Sally covered in blood, wrapping bandages around men's legs.

Sally was so lost in thought and so focused on her work that she did not hear her father and brother as they came up behind her.

"You did a good job with that bandage, Sally," said her father.

"Better than I could do," admitted Alexander.

Sally appreciated the praise. Then she saw her mother walking toward them.



Chapter Four

"What is going on here?" Sally's mother demanded. "Sally! Are you hurt?"

"It looks like we have another doctor in the family," explained Sally's father.

Virginia's face turned sour. "Look at your dress. It's filthy!"

"Maybe Sally can help you at the field hospital instead of me," suggested Alexander.

"I need Sally at home," Sally's mother insisted. "She has chores to do."

"Mother," Sally began tentatively, "I have been secretly watching Father work for years. I know what to do and what would be expected of me. I have dreamed of being a surgeon. Please let me help Father."

Sally watched as a range of emotions raced across both her parents' faces—fear, anger at having been **deceived**, and even a bit of pride.

"I don't know, Sally," Virginia said as she started to walk toward the house.

Sally's father invited the young soldiers to the house so he could check their wounds. Once that was done, Virginia offered to cook a meal for all of them. Sally helped her mother prepare and serve the food. They even served a pie for dessert.



The men were grateful for the home-cooked meal as well as to Sally for bandaging their wounds. After saying their thanks and goodbyes, they left to rejoin their troop.

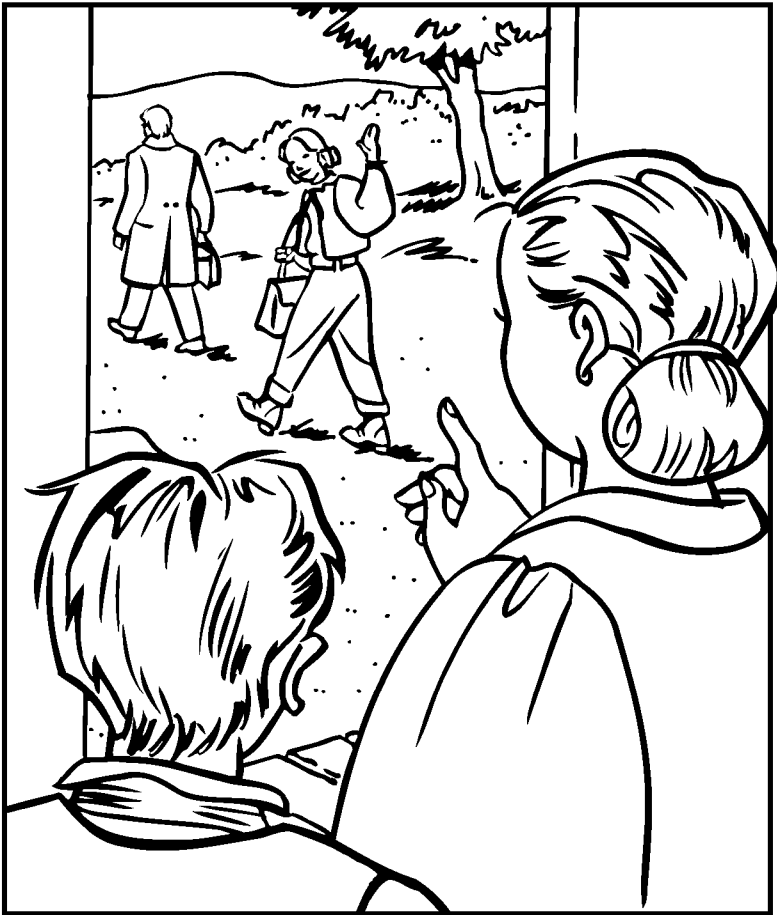
"I'll clear the table," offered Alexander, eager to stay away from the field hospital.

"Sally, would you like to come to the field hospital with me?" asked her father.

Sally looked to her mother. Virginia's expression said everything. She was not pleased, but she loved her daughter too much to build a fence around her dream.



Sally gave her mother another long look, and then said yes to her father. Sally's mother helped her find **suitable** clothes for her new work. She ended up wearing some of Alexander's clothes. There were changes going on in their country, and changes at home as well.



Glossary

ambition	someone's dream or objective (p. 8)
field hospital	tents located near a war zone where wounded soldiers receive medical care (p. 7)
deceived	to have been fooled or lied to (p. 16)
lead	a heavy, soft gray metal often used to make bullets (p. 13)
noble	having very fine, good qualities (p. 9)
suitable	something that matches well with something else (p. 19)
surgeon	a doctor who performs operations (p. 5)
tending	to give special attention to something or someone (p. 11)
War Between the States	the American Civil War fought between the North and South, 1861–1865 (p. 4)

Name _____

INSTRUCTIONS: Write a prediction in the *Make* column. Revise the prediction as you read in the *Revise* column, and write a check mark in the *Confirm* column if you can confirm your prediction after reading. Record the events that actually happen in the *Actual* column.

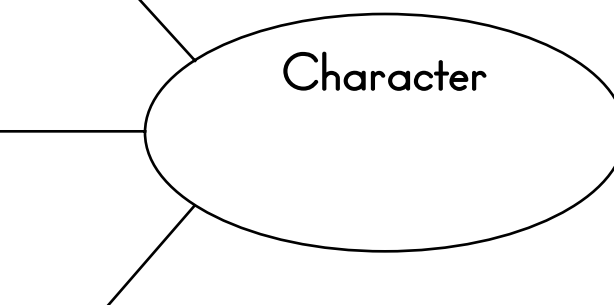
Make	Revise	Confirm	Actual

Name _____

INSTRUCTIONS: Write *Sally* in the circle labeled *Character*. In each box, list a character trait to describe Sally, along with story clues that helped you identify the trait.

Trait:
Clues:

Trait:
Clues:



Trait:
Clues:

INSTRUCTIONS: Choose one character trait Sally possesses that you think is admirable. Explain how this trait will serve her well in life.

Name _____

INSTRUCTIONS: Circle the word in the sentence that contains an apostrophe. Then, on the line, write *possessive noun* or *contraction*. If the word is a possessive noun, underline the word that belongs to the noun.

1. Sally's father was a surgeon.

_____ possessive noun

2. The father's study was filled with books.

3. Her life's dream was to become a surgeon.

4. If her mother found out the secret, she'd disapprove.

5. Alexander almost fainted while tending to the soldier's leg.

6. A doctor's job is to treat the health of people.

7. Sally didn't know if she would be able to persuade her parents.

8. Her brother's clothes were more suitable for the job.

INSTRUCTIONS: On the lines below, create two sentences of your own, each one containing a possessive noun.

1. _____

2. _____

Name _____

INSTRUCTIONS: Read each sentence. Choose a word from the box that completes each sentence by changing the word into an adverb. Write the new word on the line in each sentence and circle the word each adverb describes.

secret	tentative	quick	tight
sudden	bad	careful	eager

1. Sally tore the sheet, and _____ tightly _____ wrapped the bandage around the wound to stop the bleeding.

2. Sally had been _____ learning all about becoming a surgeon.

3. She _____ watched her father, taking notes on what she saw.



4. When Sally knew her parents discovered her secret, she _____ searched for the right words to say.

5. The leg was _____ bleeding and needed to be bandaged.

6. Sally _____ jumped when the soldier called to her.

7. She _____ ran to the house to get a medical bag.

8. Sally _____ accepted the offer to work with her father.

Alice's Birthday Cake

A Reading A-Z Level T Leveled Reader

Word Count: 1,628

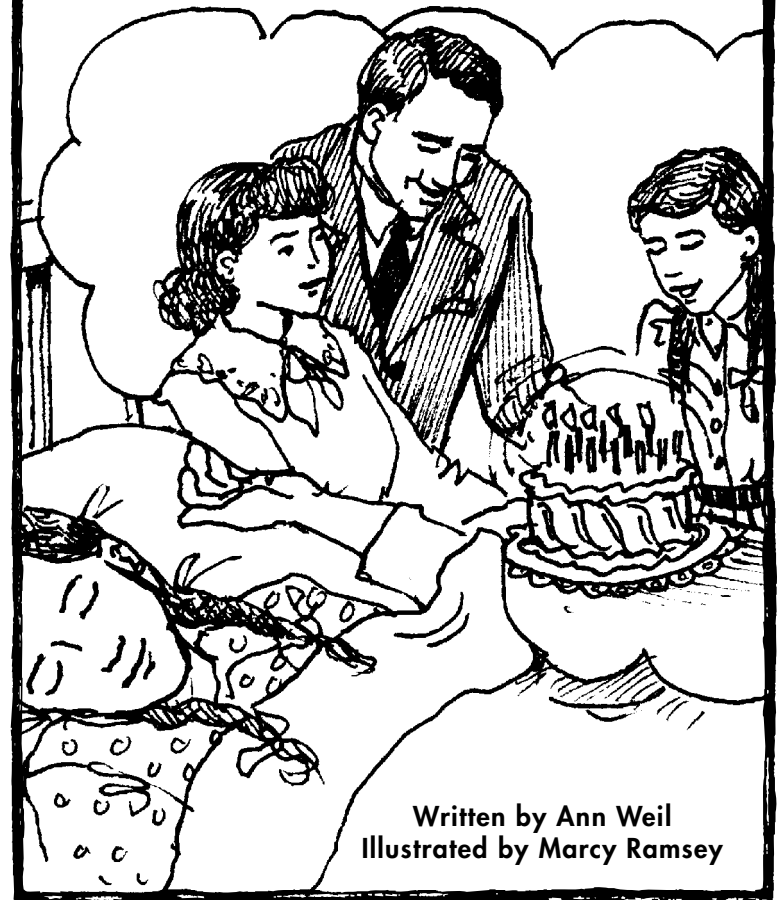


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Alice's Birthday Cake



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Illustrated by Marcy Ramsey

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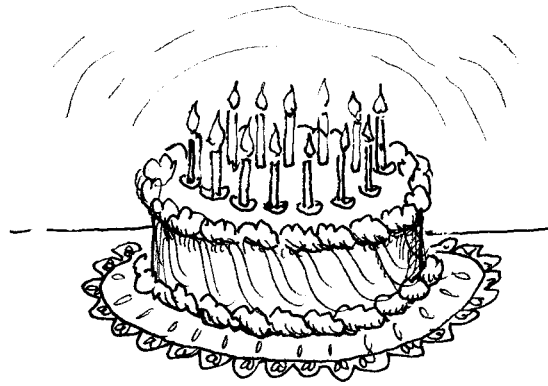


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Chapter One

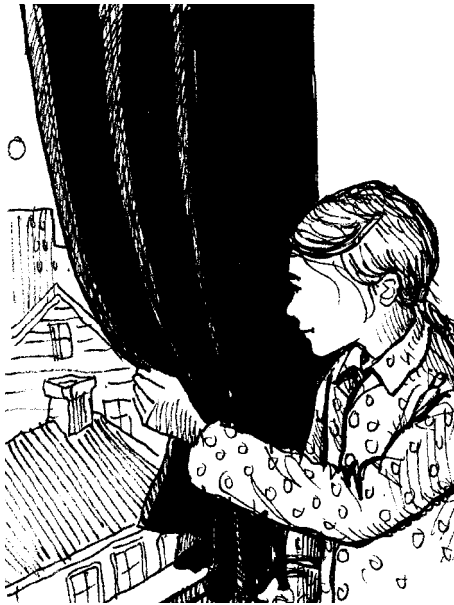
Alice had a wonderful dream. It was her thirteenth birthday. Her mother had baked her a cake with pink frosting. Her father was handing her a brightly wrapped box with a beautiful bow.

Alice woke up just as she was unwrapping the present. She snapped her eyes shut, hoping to slip back into the lovely dream, but it was too late. She could hear her mother getting ready for work. Alice glanced at the clock on the table next to her bed. It was time for her to get up, too.

Alice's room remained dark as she dressed because heavy **blackout** curtains sealed out the golden sunlight. The country was deep into World War II, and people were afraid that enemy planes would see lights from the city and know where to drop their bombs. Every night, outdoor lights were turned off and indoor lights were hidden. A **warden** patrolled Alice's neighborhood each night. He made sure not even a sliver of light glowed around the edges of drawn blackout curtains.

Alice looked forward to pushing aside her blackout curtains each morning to let sunlight flood her room.

This morning Alice felt cheerful. She might play in the park after school with her friends. But first she had to wake her little brother, Robert, get him dressed, give him breakfast, and walk him to school.



Alice's mother had already left for work by the time Alice and Robert walked into the kitchen. After Alice's father had been **shipped out** to fight the war in Europe, Alice's mother took a job working at a factory that made parts for ships. Like many women, she held a job once done by a man who had been shipped out like Alice's father. America needed new ships to win the war, and it was up to the women to work eight to twelve hour days, six or seven days a week to keep the factories running.



Alice was proud of the **sacrifices** her parents made for the war effort. But she missed having breakfast with her mother. She missed her father, too.

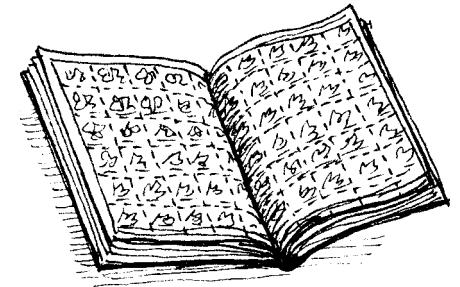
"You look sad," said Robert. He had a mouthful of cereal and milk dribbling from his chin. "What's wrong?"

"Nothing," Alice lied as she absently wiped her brother's face with a napkin. Robert was right. Alice was feeling sad. Her thirteenth birthday was tomorrow. In the past, Alice looked forward to her birthdays, but this year was different. Her father usually would wake her up by belting out the song *Happy Birthday to You*. It always made her laugh. "Unlucky thirteen," Alice said to herself as she helped Robert tie his shoes.



Chapter Two

Since Alice's mother worked long hours at the factory, Alice did more chores around the house. Most days Alice did not mind the extra **responsibility**, she felt good being able to help out. Today the one chore she had to do—grocery shopping—made Alice want to groan with the effort it would take. Alice was not in the mood to travel from store to store to find all the items on the shopping list her mother had left along with money and their **ration book**.



Each family had a ration book with stamps for certain kinds of food. Because of the war, the government rationed food to make sure there was enough for everyone when supplies were limited. Stores ran out of the most popular items, such as coffee and **canned goods**. Alice had to match the right stamps from her ration book with the food on her mother's list. Shopping could take a long time.

Alice saw milk on the list and was not looking forward to another marathon shopping trip. Milk could be difficult to find. Once there was no milk, so they had to eat their cereal with water instead.

Alice washed dishes before she and Robert left for school. Tomorrow was Alice's birthday, but she knew there wasn't going to be a party. Alice saw there were no ration stamps left for sugar, butter, or eggs. Her mother couldn't bake a cake with just flour. Alice and Robert walked to school in silence.



Right after school, Alice had to go grocery shopping. She waved bye to her friends as she grabbed Robert's hand. Her friends had been whispering and quickly stopped when they saw Alice. Alice wondered if they were talking about her. She hadn't told them it would be her birthday tomorrow. What was the use? No cake, no party, so no reason to tell her friends. Alice wondered if that's what they were whispering about. Maybe they knew it was her birthday, and they were mad they hadn't been invited to a party.

Alice walked to Main Street, her mood darker than the blackout curtains in her room. It took three stores before she found everything on the list. Robert had been quiet. He didn't even complain that the stores did not have his favorite canned peaches. She was thankful.

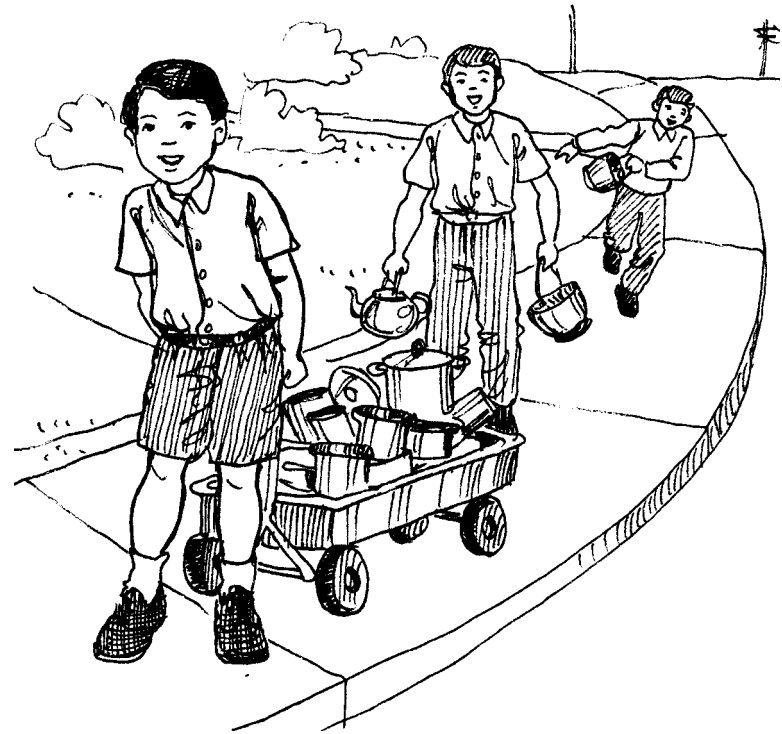
On the walk home, Alice and Robert passed an elderly couple sitting on their front porch. Alice saw a blue star in their window. A blue star meant that a man from that family was a soldier away at war. A gold star meant that the soldier had been killed. Alice and Robert passed many blue stars. Alice thought of the blue star in their window at home and wished that her father was home safe.

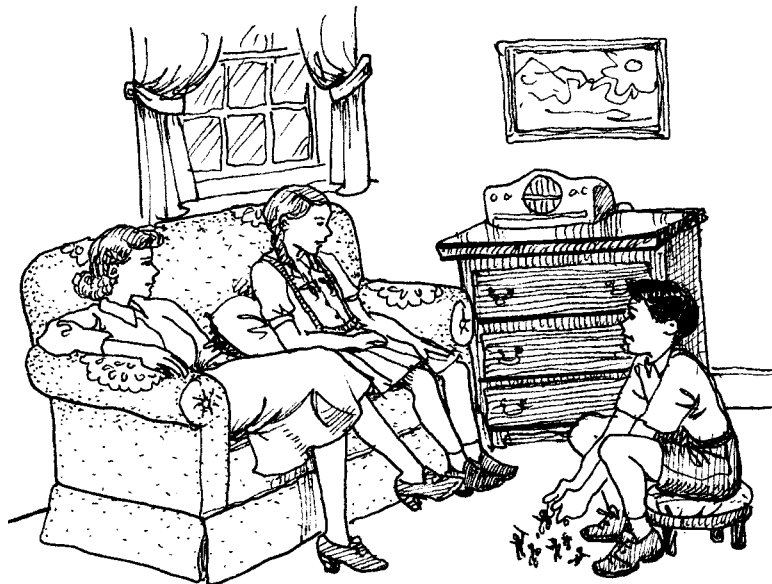


Chapter Three

Alice's mother was always tired when she got home from work in the evening. Alice tried to have dinner ready so her mother could enjoy a bath before they sat down together to eat.

At dinner, Robert told them about how he and his friends had won the **scrap** drive. They had collected more bits of metal and tin foil than any other team. The metal was used to make materials for the war effort.





After dinner, Robert played with his toy soldiers as they all listened to the radio, hoping for good news about the war. "When is father coming home?" Robert asked.

"Soon, dear," said Mother in a soft voice. Alice knew that her mother missed their father as much as she did. Alice would not complain about her day to her mother. She knew birthdays were small when compared to helping the war effort, but Alice, afraid her disappointment would show, went to bed early. Upstairs, she cried herself to sleep.



Chapter Four

To Alice's great surprise, she woke the next morning to the sound of singing. Her mother and brother were standing next to her bed, belting out *Happy Birthday to You* in their loudest voices just as her father would have. At first, Alice thought she was dreaming. But it was really happening.

"You didn't forget!" Alice said happily, sitting up in bed.

"Of course not," said her mother. She gave Alice a big birthday hug.

It was Saturday. Alice's mother did not have to work this weekend, so they all ate their cereal together. Alice was much happier that today was her thirteenth birthday. Her blackout curtains no longer reflected her mood.

After breakfast, Mother gave Alice some money so she and Robert could go to the movies. "It's a double feature," Alice's mother said. "Have fun!"

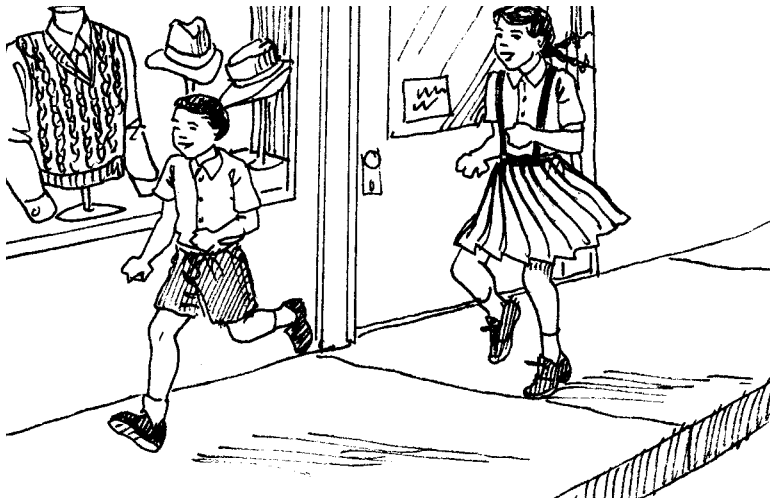


Alice and Robert walked to the movie theater. Alice would rather have had a party, but she was happy her mother and brother remembered she turned thirteen today. Alice looked for her friends in the line of people buying tickets, but they were not there. "That's strange," she said to herself. Usually her friends went to the movies on Saturdays. Alice wondered if they were having fun without her. *If only I was having a birthday party*, she thought sadly. She bought two tickets and led her brother inside.

Chapter Five

As they left the movie theater, Robert said, "Hurry, let's run home."

The bright sun hurt Alice's eyes after being so long in the dark theater. "What's the big rush?" said Alice. She had enjoyed the movie, but she still felt **disappointed** that she wasn't going to have a party. Alice knew they did not have the ration stamps for a cake, but a party would have been nice. Alice thought about looking for her friends, but then she wondered if they were still her friends after all. Robert had started to run home already, so Alice jogged to catch up to him.



Once home, Robert had left the front door hanging open. Alice walked in and closed the door behind her. The house seemed strangely silent. Where was Robert? Where was her mother? Alice felt scared. The door to the dining room was closed. Alice started to push it open. "Hello! Anybody here?" she called out in a curious voice.

"Surprise!"

Alice slowly blinked her eyes as if what she saw would disappear. All her friends were standing around the dining table. On the table was a big cake with pink frosting. Alice's friends sang *Happy Birthday to You*.



"But . . . how . . . I didn't think . . ." Alice could barely speak, she was so happy.

"I saved our ration stamps so I could buy enough butter, eggs, and sugar for your cake," explained Alice's mother. "Your friends' families helped, too."

"We thought you might have guessed what all the whispering was about," said Alice's friend Elizabeth. "We were talking about which stamps we still needed for your cake."

Alice saw a letter next to the cake. "What's this?" she asked her mother.

"Read it," her mother suggested.

Alice read the letter. It was a birthday card from her father. He was safe. Alice was wrong when she thought that turning thirteen was unlucky. She felt awful for thinking everyone had forgotten about her. All her friends and family loved her very much and had made turning thirteen truly special.

*My dear Alice,
Happy Birthday.
I wish I could be
there with you . . .*

Glossary

blackout	a time when lights have to be turned off or kept from being seen, such as during an air raid (p. 5)
canned goods	food that is sealed in tin cans to keep it from spoiling (p. 8)
disappointed	the feeling of not achieving something that you wanted (p. 17)
ration book	a book of stamps given by the government that limits the amount of food a person could buy (p. 8)
responsibility	something of importance that a person takes charge of (p. 8)
sacrifices	actions or objects unselfishly given to help other people or a cause (p. 7)
scrap	material, like metal, that is left over from a project (p. 12)
shipped out	when a military person travels away from home, sometimes to fight in a war (p. 6)
warden	somebody whose job it is to look out for an event or for people (p. 5)

Name _____

INSTRUCTIONS: Write a prediction in the *Make* column. As you read, revise the prediction in the *Revise* column, and write a check mark in the *Confirm* column if you can confirm your prediction after reading. Record the events that actually happen in the *Actual* column.

Make	Revise	Confirm	Actual

Reading a-z

[illegible]

SKILL: CAUSE AND EFFECT

Name _____

INSTRUCTIONS: Choose an adverb from the word box that best describes the verb in the sentence, and write it on the line provided. Then circle the verb that the adverb describes.

barely	brightly	absently	strangely
usually	sadly	quickly	happily

The children slowly moved away from the growling dog.

1. The sleepy child _____ stumbled into his sister.



2. The alarm clock _____ woke her up every morning.

3. The students _____ ran inside when it started to rain.

4. She _____ walked away from the students who were teasing her.

5. They _____ accepted the award for their project.

6. A _____ colored box arrived in the mail.

7. The house seemed _____ silent.



8. He twisted his ankle and could _____ walk.

Name _____

INSTRUCTIONS: Define each base word using a dictionary. Then fill in the blank in each sentence by adding a prefix or suffix to a base word. Use the definitions of the base words and context clues to choose the correct word for each blank.

equal: _____

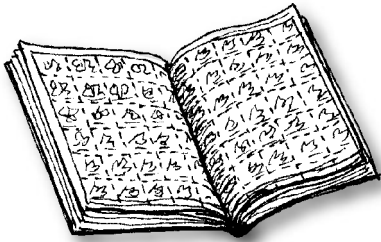
lock: _____

pack: _____

skill: _____

success: _____

tie: _____



un- -ful

1. After the trip, we had to _____ our clothes from the suitcase.
2. There were _____ amounts of milk in the glasses.
3. Many years of practice made the man a _____ carpenter.
4. Don't forget to _____ your shoes before you take them off!
5. The students created a _____ science experiment.
6. I had to _____ the door with a key before I could open it.

Carlos's Puzzle

A Reading A-Z Level T Leveled Reader

Word Count: 1,750



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Carlos's Puzzle



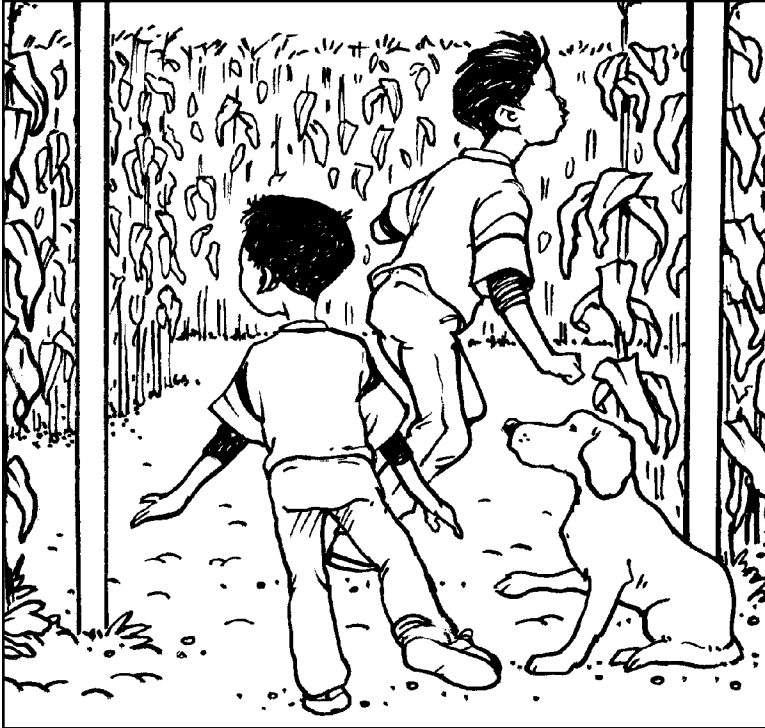
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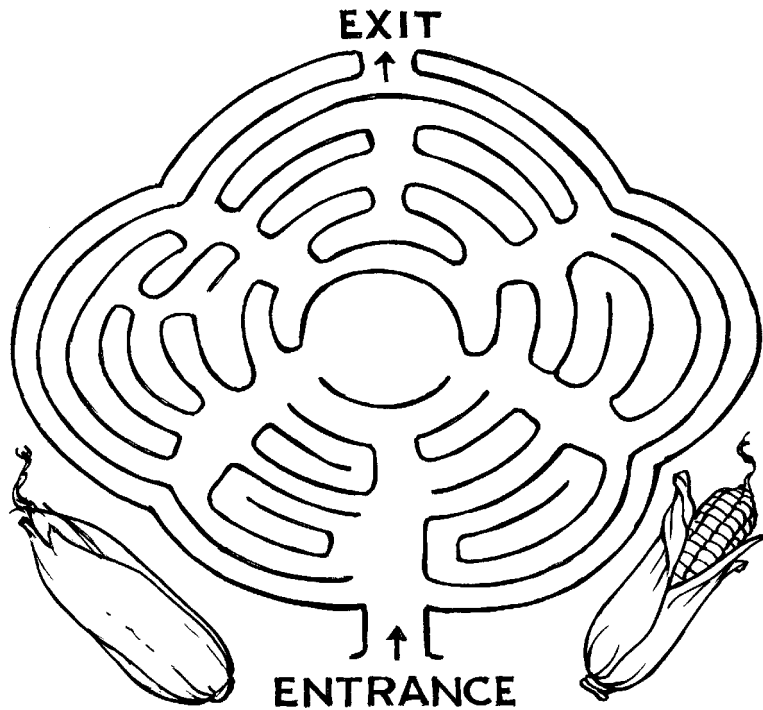


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Carlos

Carlos first heard about the maze on a cool afternoon in autumn. He liked nothing better than working his way through mazes. In fact, he was an **expert** at finding the path from beginning to end without getting lost. He knew many of the tricks maze makers used to **disorient** people trying to find the solution to their puzzle.

He was in the kitchen creating his special ham sandwich with ham, lettuce, onions, pickles, mayo, mustard, and peanut butter, when his mother came in with Alf. Alf barked once, wagged his tail, panted at the ham, sat down, and stared up at Carlos.



Alf knew that Carlos would feed him because Carlos always fed him. Carlos did everything for Alf. He filled Alf's bowls, took him for walks, and brushed him when he was matted. He even let Alf sleep beside him. Carlos tossed Alf a small piece of ham and went back to creating his **masterpiece**.

"Have you told Javier yet?" Carlos asked as he folded his sandwich together and took a bite. Javier was Carlos's big brother, and he had no interest in mazes whatsoever.

"Not yet."

"He'll hate it, you know. If it doesn't have something to do with sports, well, you know what I mean."

"I know he won't be thrilled," Mom said as she worked, "but we went to the Sportsplex for him. This time we're doing the maze for you."



Javier

Javier burst into the kitchen as Carlos was putting the dishes into the dishwasher. Javi was wet, loud, and **invigorated**.

"I did it again!" he boomed, as he opened the refrigerator door and yanked out the ham. "Make me a ham sandwich, little bro, because I am the man. I am king of the playing field with three base hits and a home run, and I deserve a reward."

Carlos considered telling his brother to make his own sandwich when his mother stepped in and told Javier that a big star like him was perfectly capable of making his own sandwich.

Javier had long ago convinced his little brother that the things Carlos was good at didn't matter. Carlos got better grades in school, he was an expert chess player and an excellent cook, and he was brilliant on the computer, but Javier could not care less.

"Play chess with me, Javier," Carlos would say.



"Chess? Why would I play a boring game like chess when I could be hitting home runs or making touchdowns? Let's go out and throw some passes, little bro. Or are you afraid you can't catch anything I might throw your way?"

As Javier ate his sandwich, he learned of the family's trip to the maze. "What's a corn maze?" Javier asked through a mouthful of his monster sandwich.

"They're like the mazes in my puzzle books, only 3-D and made by cutting paths through stalks in cornfields," Carlos explained. "Some of them are based on hedge **labyrinth** designs that are hundreds and hundreds of years old. Most of those are easy to walk through." Carlos added. "Some are more modern in design, take up **acres** of land, and take hours to solve. The one we're going to is supposed to be difficult, but not **impossible**."

"Sounds fascinating," Javier muttered sarcastically. "I'll stay with a friend."

"We're all going," his father said firmly, and the boys knew that was that.



This eleven-circuit labyrinth was created in the year 1200 at Chartres Cathedral, near Paris, France.





The Contest

That night before bed, Carlos came up with a plan and discussed it with Alf.

"So here's my plan, Alf. I'll challenge Javi to a contest. The first one through the maze will be the winner. He's faster, but I'm smarter, so I think I can beat him."

Javier was on his bed in the room he and Carlos shared, lost in the tinny music that was leaking from his headphones. After a while, he took off the headphones and sat up.

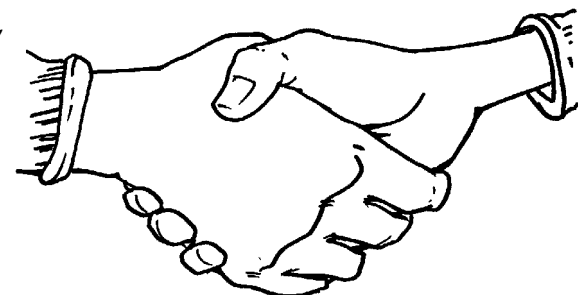
"So, little bro," he said. "If I have to go to this boring maze, maybe we should make a contest of it to make it more exciting."

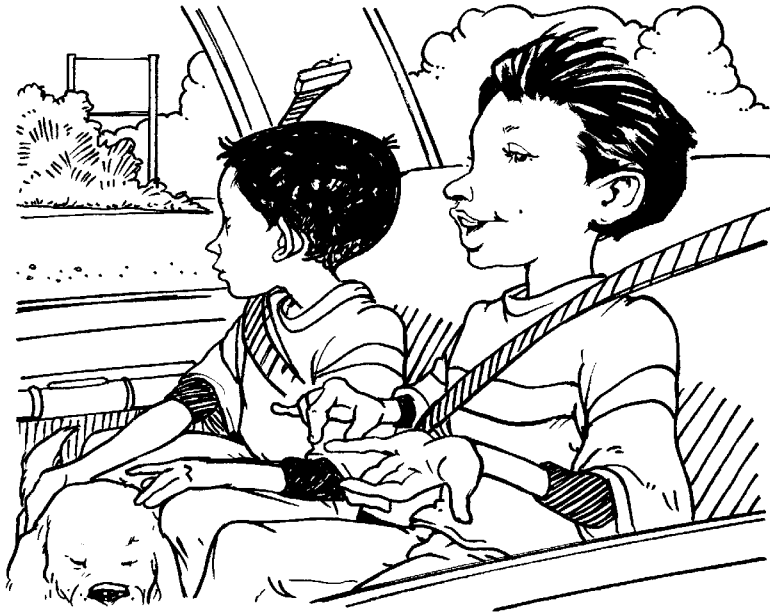
Carlos couldn't believe his big brother was really going to suggest the exact same thing he had just thought. He couldn't have planned it better.

"How about if we say the last one through the maze does all the chores in the house for a month?" Javier continued.

"Hmm . . . well, okay," Carlos said, trying to sound calm.

"It's a deal then,"
Javier agreed,
and then he
laughed.





Carlos and his family piled into the car the next afternoon to drive to the farm with the corn maze. When the people were settled, Alf crawled in and promptly fell asleep on Carlos's feet.

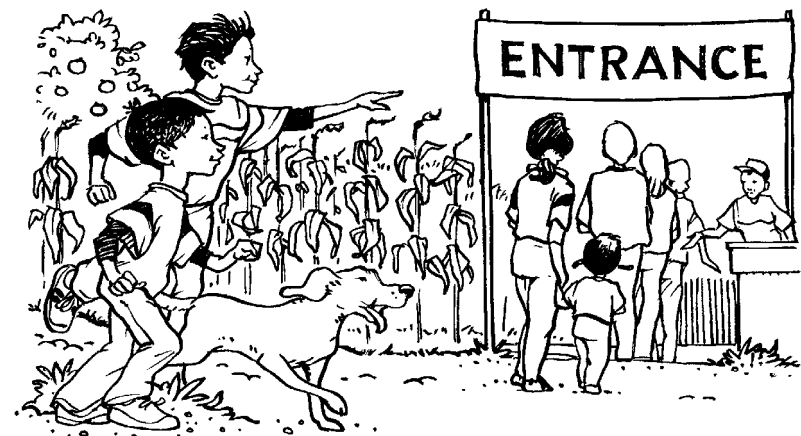
As Dad drove to the farm, Javier mentioned the contest at least ten times. He set up rules and **boundaries**. He reminded Carlos to prepare for a very long exhausting month of chores, and told him over and over again that he had no chance of winning.

Carlos didn't answer Javier, not even once.

The Maze

Finally, the family arrived at the bustling farm, and Carlos could begin to put an end to Javier's boasting. All around them, people were ducking through rows of apple trees carrying paper bags full of apples they had just picked. Still others struggled to carry freshly picked pumpkins to their cars. Javier, Carlos, and Alf ignored it all and headed straight for the corn maze.

At the entrance, the brothers waited their turn as dozens of people stepped into the maze to try their wits at finding its solution. The trio inched closer and closer. Alf panted heavily in **anticipation**.





"One, two, three, go!" Javier shouted as soon as it became their turn. Javier took off, disappearing quickly onto the first path to the right that cut through the tall, brown corn stalks.

Carlos and Alf did not move. Carlos was thinking, and Alf was waiting.

"Okay Alf," Carlos finally said. "This may be one of the most difficult mazes we've ever tried, but we're clever, and we can beat it. Javi will try to race through the maze, but that's not the way to win. Our **strategy** will be to take our time and think about each of the paths."

Carlos started out with Alf following close behind. He knew the maze was created to make a picture of an apple tree full of fruit from a billboard he had seen from the car on his way here. His experience with other mazes told him that the maze's start was probably at the base of the tree's trunk, and that there were most likely three possible paths through the maze, each with its own exit at the top of the tree.

It didn't take Carlos long to remember where he had been or to figure out the correct paths. After about ten minutes, he knew he had to be close to the exit. He couldn't believe he had solved the maze so quickly.

Then Carlos came to a dead end. He quickly retraced his steps to the **crossroads** where he had taken the left fork and instead took the right. As Carlos moved on, finding his way, turning back, considering his options, he could imagine his brother thrashing around in the middle of the maze.

Carlos knew he could easily win this contest now. He was so close to the exit, but he thought he could also hear Javier. Then he chuckled as he heard Javier shouting about how unfair it was that he had found himself in a dead end for the third time.

It took Carlos about another five minutes before he saw the exit in front of him. Carlos raised his arms in victory and started to jog to the finish feeling much like Sylvester Stallone in *Rocky*. Carlos could hardly believe it. His big brother would have to respect his win, and Javier would be doing his chores for a whole month. He felt like he was floating.



The Dilemma

And then Carlos heard Javier again. This time Javier was yelling. He almost sounded panicked, but Carlos couldn't be sure. What should he do? What if Javi was trying to trick Carlos to keep him from finishing the maze? Carlos was in a **dilemma**. He could take the final steps to the exit and win and forget about Javi. Or, he could jeopardize his win, believe Javi was in trouble, and go back to help him. He could even stay where he was and hope that others in the maze would help his brother. Carlos stood there and looked down at Alf.

Then Javier started calling for help and saying, "Seriously, bro, this is no joke!" Carlos felt Javier must be hurt. He had to do something, so he retraced his steps. He checked the maze paths near Javi's cries, but he didn't find Javier. He then went back to the next **junction** and went right because he had come from the left. As the path looped in front of Carlos, he could see Javier's running shoes sticking out from where the corn curved.



Javier looked like he had been trying to pull himself up, but had twisted his ankle badly in a hollow worn in the dirt path. "So, little bro, you got here fast," Javier said, cracking a grin. "You must not have been too far ahead of me."

"Let's just get you out of here," said Carlos as Javier threw his arm around Carlos's shoulders to support his weight.

As they walked, Javi boasted about how he was running down the path with his mind on the exit so he didn't see the hole. He was going so fast, and it was such a surprise, "Not even Hercules could have stopped himself from going down."

"Crash and burn," Javier said. "It was a fantastic wipeout!"

"I'm glad you weren't too far ahead," he continued. "I tried to walk, but when I tried to put weight on my ankle, it just gave out, and I surely wasn't going to hop all the way out."





The Win

“Actually, big bro, I was almost out when I heard you yelling,” Carlos said quietly.

Javier looked up. He could see the exit clearly. His storytelling had distracted him from the fact that they were still inside the maze and still in the contest.

“Well, what do you know?” Javier said, looking his little brother in the eye. “It looks like I’m doing chores for a month.”

Carlos saw the flash of pride in Javier’s eyes before it disappeared. That was better than winning.

Glossary

3-D	short for three-dimensional; an object that is not flat but has depth (p. 8)
acres	a measurement of land almost equal to a football field (p. 8)
anticipation	the feeling of expecting something to happen (p. 12)
boundaries	the limits of where you can go or what you can do (p. 11)
crossroads	roads that pass through each other (p. 14)
dilemma	a tough decision between two choices that are equally unpleasant (p. 16)
disorient	to confuse someone about where they are (p. 4)
expert	someone that is really good at doing a certain act (p. 4)
impossible	not possible (p. 8)
invigorated	to be full of energy (p. 6)
junction	a place where roads come together (p. 16)
labyrinth	a maze; paths that are connected in a confusing way (p. 8)
masterpiece	an impressive work of art (p. 5)
strategy	a plan for winning a contest (p. 13)

Name _____

INSTRUCTIONS: Write a prediction in the *Make* column. As you read, revise the prediction in the *Revise* column, and write a check mark in the *Confirm* column if you can confirm your prediction after reading. Record the events that actually happen in the *Actual* column.

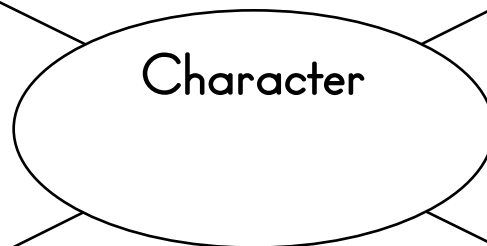
Make	Revise	Confirm	Actual

Name _____

INSTRUCTIONS: Write *Carlos* in the circle labeled *Character*. In each box, list a character trait to describe *Carlos*, along with story clues that helped you identify the trait.

Trait:
Clues:

Trait:
Clues:



Trait:
Clues:

Trait:
Clues:

Name _____

INSTRUCTIONS: Circle the adverb in each sentence. Then underline the verb that each adverb describes.

1. Javier eyed Carlos's sandwich hungrily.
2. Javier ran aimlessly through the maze.
3. Carlos thought carefully about what paths to choose.

INSTRUCTIONS: Create adverbs from the following adjectives by adding the suffix *-ly* or by changing the final *y* to an *i* and adding *-ly*.

restless _____ excited _____

anxious _____ lazy _____

happy _____ sharp _____

courageous _____ ready _____

INSTRUCTIONS: Choose adverbs from the list above to create two sentences.

1. _____

2. _____



Name _____

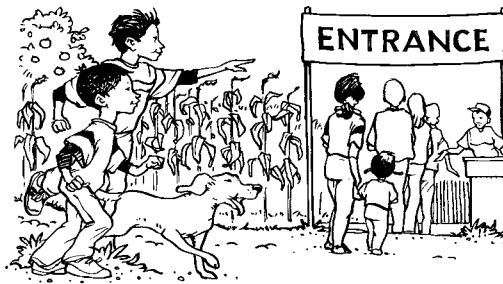
INSTRUCTIONS: Circle the synonyms in these sentence sets:

Javier wanted to complete the maze first, so he ran.

Carlos knew he could finish if he stopped to think about the paths.

Carlos's dad was firm about Javier joining the family.

Carlos had a strict sense of how to go about solving a maze.



INSTRUCTIONS: Use a thesaurus to identify a synonym for each of the following words.

yelled _____ choose _____

clean _____ image _____

location _____ lovely _____

remain _____ upset _____

INSTRUCTIONS: Choose synonyms from the list above to create two sentences.

1. _____

2. _____

Mysteries of the Lost Civilization

A Reading A-Z Level T Leveled Reader

Word Count: 1,473

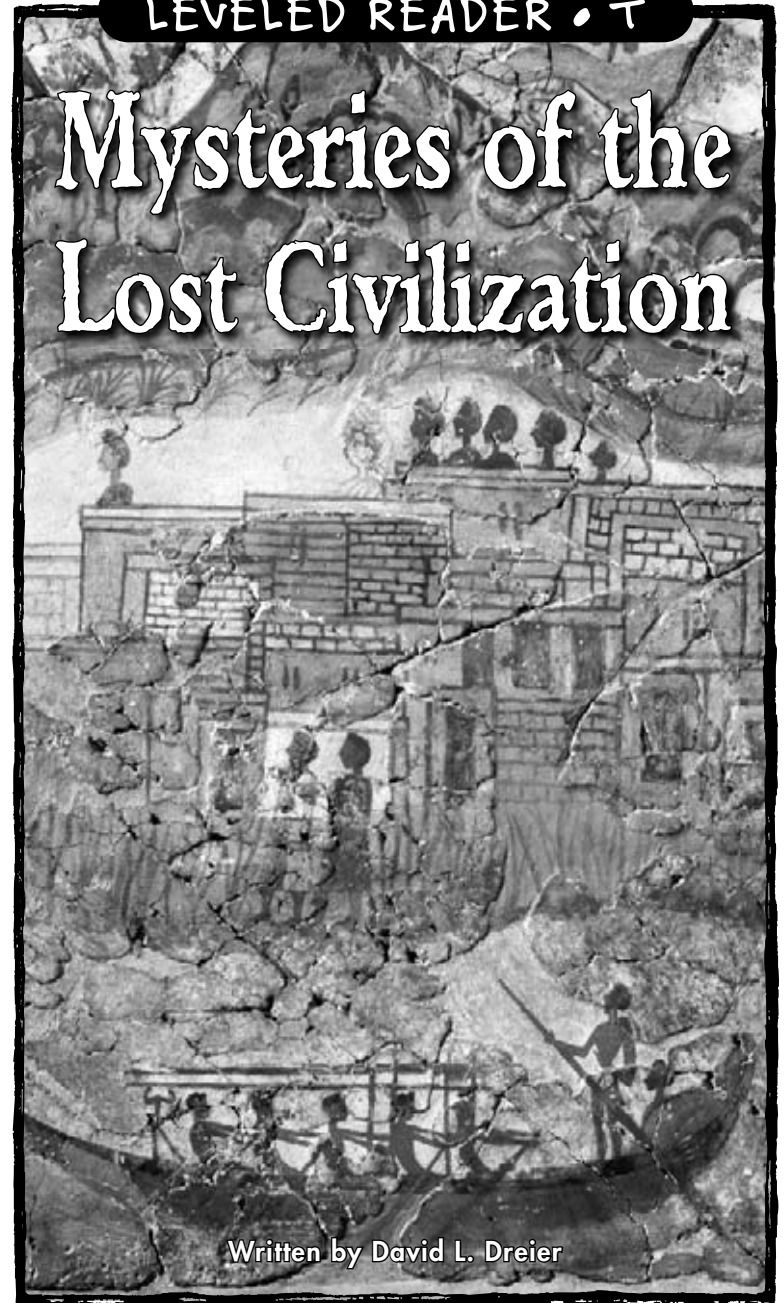



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Mysteries of the Lost Civilization



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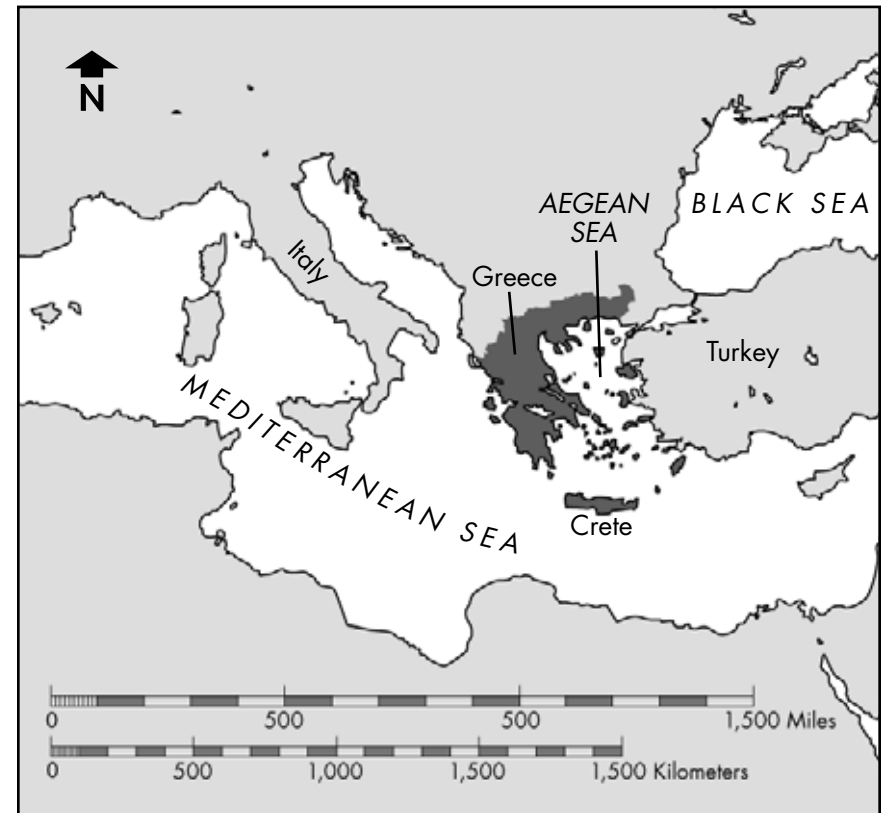
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The Island of Crete

South of Greece there is a large island called Crete. The island has many mountains. It is in a beautiful part of the Mediterranean Sea called the Aegean (ih-JEE-uhn) Sea. Today, Crete is a part of the country of Greece, but long ago Crete was its own nation. It was home to a great group of people and culture known as the Minoan **civilization**.

Between the years of about 2600 B.C. and 1450 B.C., the Minoan civilization prospered on Crete. Hundreds of years of trading with other countries around the Mediterranean Sea had made the Minoans rich. Then it seemed as though the Minoan civilization disappeared overnight. A **mystery** was born. How could a rich nation that was a leader among other nations, suddenly disappear?

Someone You Should Know

In Greek mythology, Minos was the son of the Greek god Zeus and ruled the island of Crete from his palace at Knossos. The word "Minoan" means "of Minos." One of the first people to study the ancient civilization on Crete named it "Minoan" after King Minos. Some research suggests there might be some truth in stories from Greek mythology. Some researchers think Minos was a title given to all rulers of Crete during the time period from about 3000 B.C. to 1000 B.C. known as the Bronze Age.



The throne of King Minos in the palace at Knossos



Minoan art shows what kind of ships the people of Crete used.

The First People in Crete

The first people on Crete probably settled on the island about 8,000 years ago. **Researchers** believe they came from the area known today as Turkey. Since Crete is an island, people had to use ships to settle there. These people would have brought their knowledge of farming and of the sea.

Researchers have learned that the soil on Crete was good for growing food. The Minoans raised sheep and grew olives and grapes. As the people's ability to create goods (such as olive oil, wine, and wool) grew, so did their civilization. The island's forests were full of trees that were cut down for wood. The Minoans used the wood to build ships. They used the ships to carry goods to trade with other nations.



Crete's farmland is still great for growing food.

The Minoan Culture

By about 3000 B.C., the Minoans had become great traders. The Minoans traded their goods with their Mediterranean neighbors for gemstones, ivory, silver, gold, and copper. These things were not found on Crete so the people valued them. The Minoans grew rich through trade.

The Minoan civilization became more advanced over time. They had a system of writing and created many fine works of art, such as **frescoes**, pottery, and jewelry. They built more towns and connected the towns with paved roads. They built storehouses to keep the goods to be traded. They built fine houses and large palaces. The palaces became the centers of society.



Minoan earring

Much of what we know about the Minoan civilization is a **theory**. A theory is an idea or a group of ideas based on **evidence**. Examples of evidence are objects such as buildings or art that can be studied by researchers.

Researchers looked at the type of gems used in Minoan jewelry and then found the mountains from which the gems were mined. Researchers also studied the type of clay used in the pottery. Frescoes and pottery are important pieces of evidence that often show how people lived. Many Minoan works of art show scenes of daily life.

Minoan frescoes and pottery show the people farming, sailing, and celebrating. They show how Minoans dressed and wore their hair. Another important piece to understanding the Minoans is that their frescoes and pottery show few scenes of battles. This tells researchers that the Minoan people were mostly peaceful and had few enemies who challenged their power.

This drinking vessel shows scenes of boxing, bull-leaping, and wrestling.



"The Boxer Rhyton"



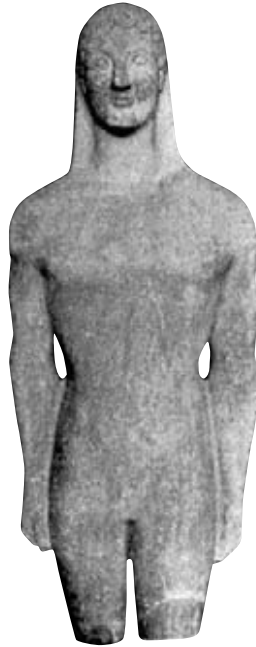
Researchers have studied the palace ruins at Malia to learn about Minoan culture.

The Minoan civilization reached its peak in the years after about 1700 B.C. Then, beginning in about 1450 B.C., the civilization **collapsed**. There is evidence that many of its cities and palaces burned. By about 1100 B.C., the Minoan civilization no longer existed.

Researchers have tried to solve the mystery of what happened to the Minoans by studying the evidence. For a long time, many historians thought a volcano was the cause.

The Explosion of Thera

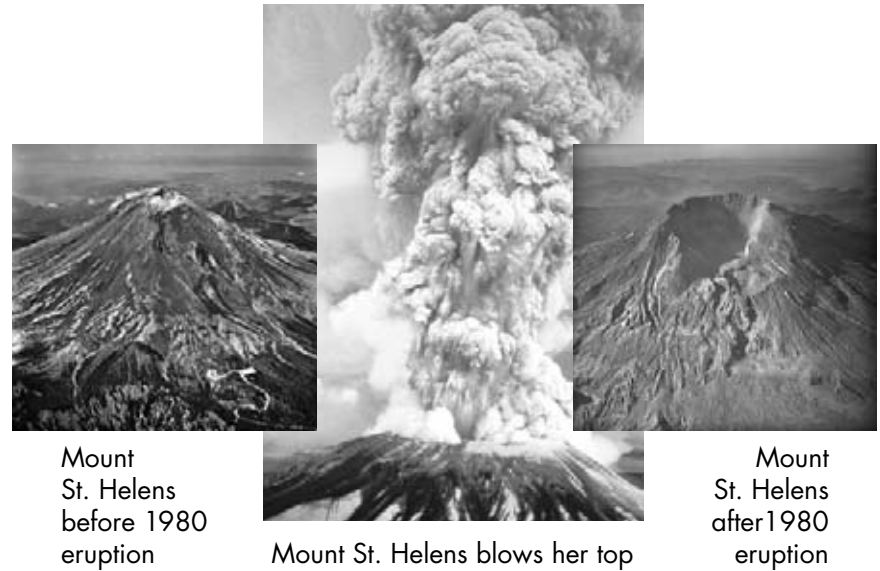
The Minoans lived near an island called Thera (now called Santorini). The island was about 70 miles (40 km) north of Crete. The island of Thera had been an active volcano off and on for many thousands of years. But then the volcano became quiet long enough for people to think the island was safe, so people built cities there.



Statue from Thera

However, a large amount of magma was building deep beneath the island. (Magma is melted rock mixed with hot gases.) The build-up of magma caused great **pressure** within the mountain island. The pressure caused the land to shake, causing earthquakes.

Then one day, after several earthquakes, Thera blew its top!



Mount St. Helens before 1980 eruption

Mount St. Helens blows her top

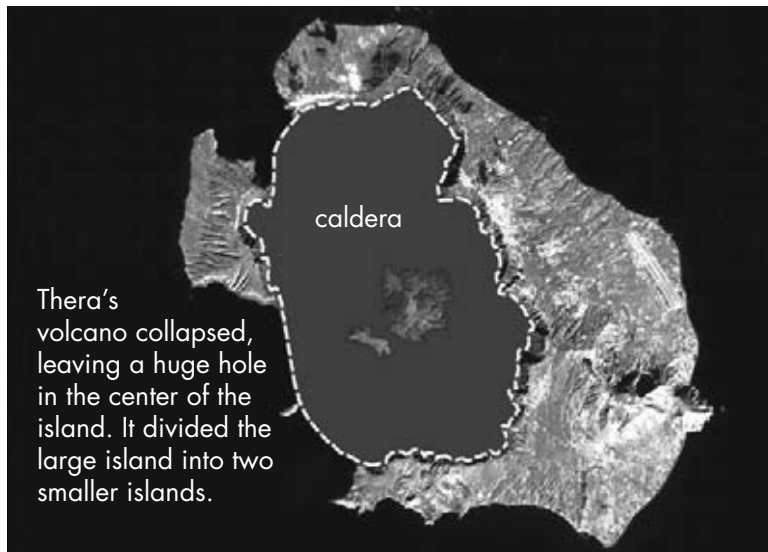
Mount St. Helens after 1980 eruption

The **eruption** of Thera was one of the most powerful eruptions in history. You may have seen pictures of Mount Saint Helens, the volcano that erupted in Washington State in 1980. That was a big eruption, but it was tiny compared to Thera.

The eruption of Thera was about twelve times bigger than the eruption of Mount Saint Helens. Large amounts of rock, hot gases, and ashes were blown from inside the volcano into the skies above it. Rocks and ash fell onto the islands throughout the Aegean Sea. Small rocks, gases, and ash formed a gigantic dark cloud.

Thera's eruption was so large it caused a large sea wave called a tsunami (soo-NAH-mee). The wave may have been 100 feet high, or even higher. The tsunami crashed in to shores around the Mediterranean. The land on many islands was covered with water. Farms and even whole cities were lost.

After the eruption, all that was left of the middle of the island of Thera was a large hole. A large hole caused by the collapse of a volcano is called a caldera (call-DARE-uh). The caldera filled up with water from the sea. The island of Thera became the shape of a crescent.



Did Thera Destroy the Minoans?

For a long time, researchers thought that the eruption of Thera caused the disappearance of the Minoans on Crete. They believed the two events happened at the same time. However, later evidence showed that the volcano on Thera erupted about 180 years before the Minoans disappeared. So did that make researchers think the volcano theory was wrong? Well, not exactly.

Some researchers now think that the eruption of Thera may have played a part in the Minoans' disappearance. Thera's eruption may have weakened the Minoans. The tsunami would have destroyed many of the Minoan ships and ports along Crete's shores and ruined crops as well. This would have left the Minoans with few goods to trade and few trading ships. The earthquakes before the eruption could have destroyed Crete's cities as well. All these losses would have made the people who survived very sad. They would have had to find lots of money and energy to rebuild Crete. These losses made Crete open to enemies like it had never been before.

The Greek Invasion

Beginning in about 1450 B.C., Crete was **invaded** by people from Greece. They were called the Mycenaeans (my-suh-NEE-unz). It was probably the Mycenaeans who struck the final blow that ended the Minoan civilization. The Minoans were weakened by the eruption of Thera. They could not gather the strength they needed to keep themselves safe from the Mycenaeans.

The Mycenaeans were fighters. They took over cities. Researchers know this because tales of their fights were written down. These writings can be read today.

This Mycenaean vase decorated with warriors shows spears and an early kind of armor.



Many people know about the Mycenaeans through a tale written by a man named Homer. Some researchers think that Homer lived around 1200 B.C. Homer wrote about a city named Troy and the Mycenaeans' fight to win back a woman named Helen. Homer's tale was believed to be **fictional** until researchers discovered a very old city in Turkey that seemed to match the city of Troy that Homer described.



Ruins in Turkey, above, helped suggest Homer's writings about Troy were true.

Was Crete Atlantis?

Many people are beginning to think that Homer's tales are real stories. They think the tales tell about real cities and real people who lived a very long time ago. They think that if Homer's stories have some truth, then perhaps other ancient writers' tales are also true.

An old Greek **philosopher** (deep thinker) named Plato told a very interesting story. He said there was once a great island country that disappeared. He called the country Atlantis. Plato said Atlantis had been destroyed by a terrible **disaster**. The disaster caused the country to sink under the sea, never to be seen again.

Plato's Atlantis

Plato wrote about Atlantis twice about a decade or so before his death in 348 B.C. He wrote of an ideal civilization that existed millions of years before the time of his writing.

According to Plato, Atlantis was larger than Libya and Asia combined (larger than the continental United States). He wrote that Atlantis's kings, who were **descended** from the sea and earthquake god Poseidon, had power over the entire known world.



Plato

Because of the greatness of Minoan Crete and the fact that it seemed to disappear, some people think it may be Plato's Atlantis. Some people think that by studying Plato's stories about Atlantis, they can learn more about the collapse of the Minoan civilization.

Whether or not Crete was Atlantis, many people are **intrigued** by both mysteries. They like finding a way to solve them. Researchers study evidence in hopes that they might put a piece of the puzzle of Atlantis and the disappearance of Minoan Crete in place. Maybe there will not be an answer to what really happened, but one thing is sure—the search for answers will continue.



Timaeus, one of Plato's writings about Atlantis

Glossary

civilization	a culture that has developed forms of government, religion, sciences, language, art, and learning (p. 4)
collapsed	to have fallen apart (p. 10)
descended	to have been connected by blood from an ancestor (p. 17)
disaster	a sudden, terrible event (p. 17)
eruption	the sudden forcing of material from a volcano (p. 12)
evidence	something that proves something to be real or true (p. 8)
fictional	made up, not true (p. 16)
frescoes	paintings on walls or ceilings made of plaster (p. 8)
invaded	to have entered another country to take over or to make war (p. 15)
intrigued	to have made someone greatly curious (p. 18)
mystery	something that is unknown or difficult to understand (p. 5)
philosopher	a person who wants to understand and explain all parts of life (p. 17)
pressure	the force created by something pushing firmly on something else; a build-up of energy (p. 12)

researchers	people who carefully study topics to find facts and discover truth (p. 6)
theory	an idea or ideas that explain events based on evidence (p. 8)

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Name _____

INSTRUCTIONS: As you read, identify the main idea and supporting details for one of the chapters in the book *Mysteries of the Lost Civilization*. Record the information on the lines provided below. Then use the information you've collected to write a short summary of the chapter.

Main Idea	Details

MYSTERIES OF THE LOST CIVILIZATION • LEVEL T • 1

Summary

SKILL: MAIN IDEA AND DETAILS/SUMMARY

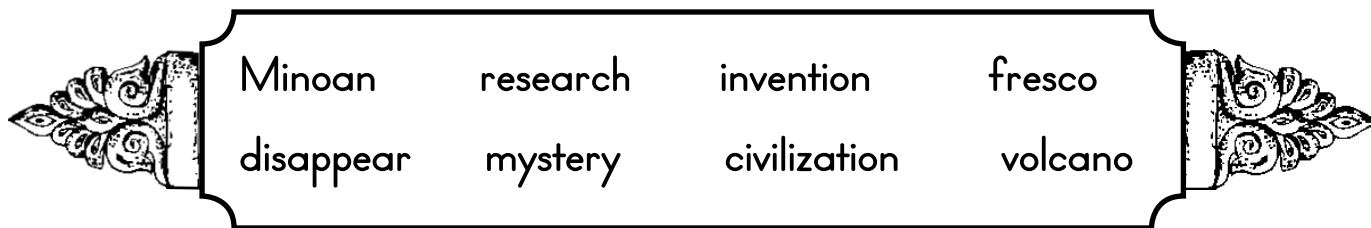
Example:

P

MYSTERIES OF THE LOST CIVILIZATION • LEVEL T • 2

SKILL: POSSESSIVE NOUNS

INSTRUCTIONS: Match each word with a pronunciation and write the word on the line. Then write a pronunciation for the list of words at the bottom of the page. Remember to use appropriate breaks and emphasis on each syllable in the word.



l . in-**VEN**-shun _____

2. MIS-ter-ee

3. CIV-ul-ih-ZAY-shun _____

4. FRESS-co

5. mih-NO-un _____

6. vah|-KAY-no

7. dis-uh-PEER

8. REE-surch

[illegible]

1. eruption _____

2. enemy _____

3. earthquake _____

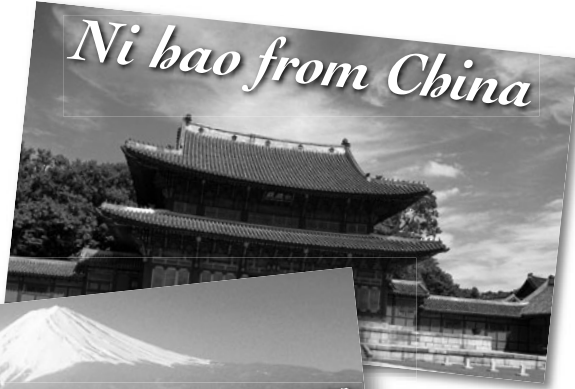
4. nation

Cali and Wanda Lou

A Reading A-Z Level T Leveled Reader

Word Count: 1,316

Ni hao from China



KONNICHI WA FROM JAPAN



Sawatdi from Thailand




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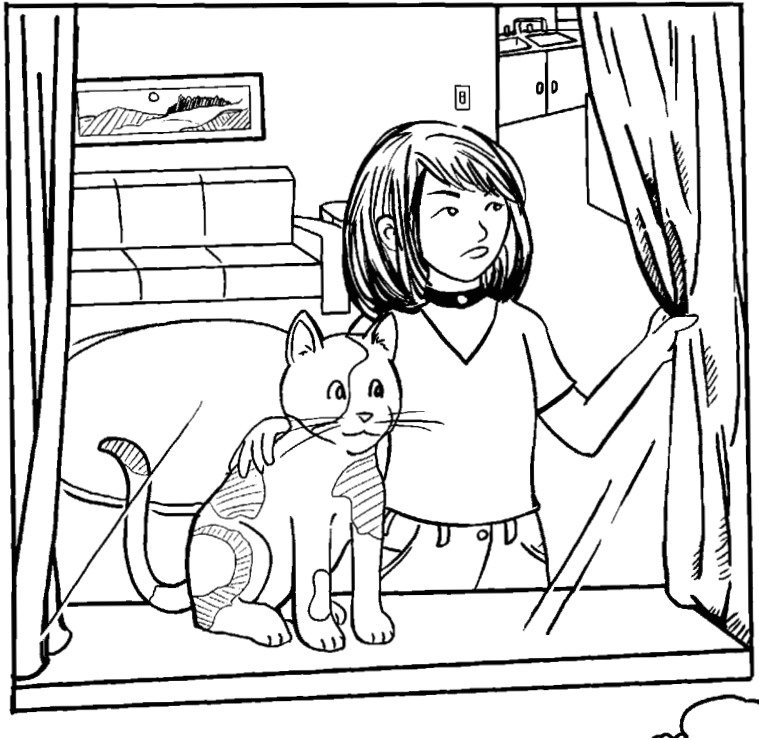
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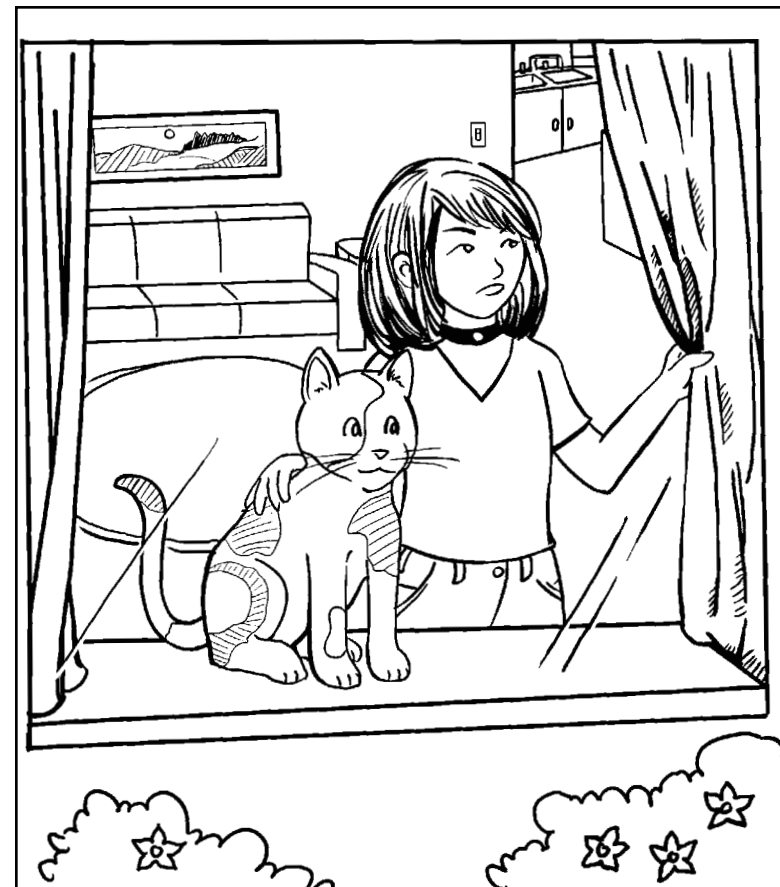
LEVEL T

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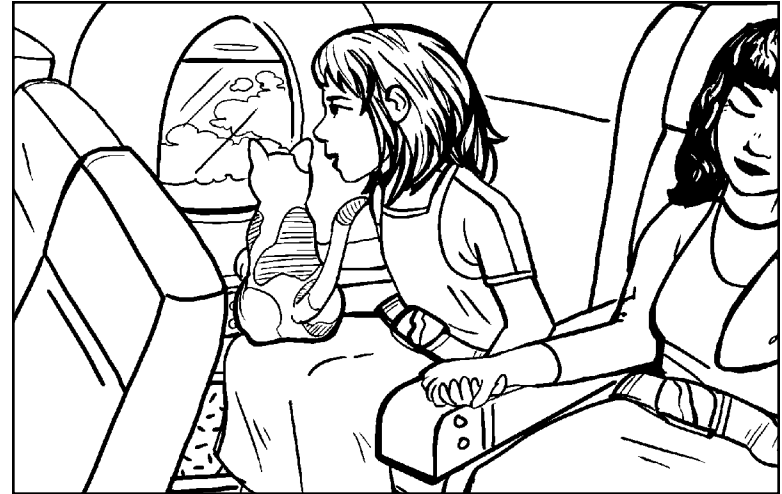


We're On Our Way

My name is Cali. My owner, Wanda Lou named me Cali because I'm a calico cat from California. We live in a little house on a quiet street where everybody knows everybody and nothing unusual ever happens. That's why Wanda Lou loves to travel.

Wanda Lou likes mysterious places, strange sights, and rare animals.

When she takes her suitcase and my purple carpetbag out of the closet and tacks a list on the refrigerator of things to pack, I know we're on our way. This time we are going to the Orient. First stop: Japan.

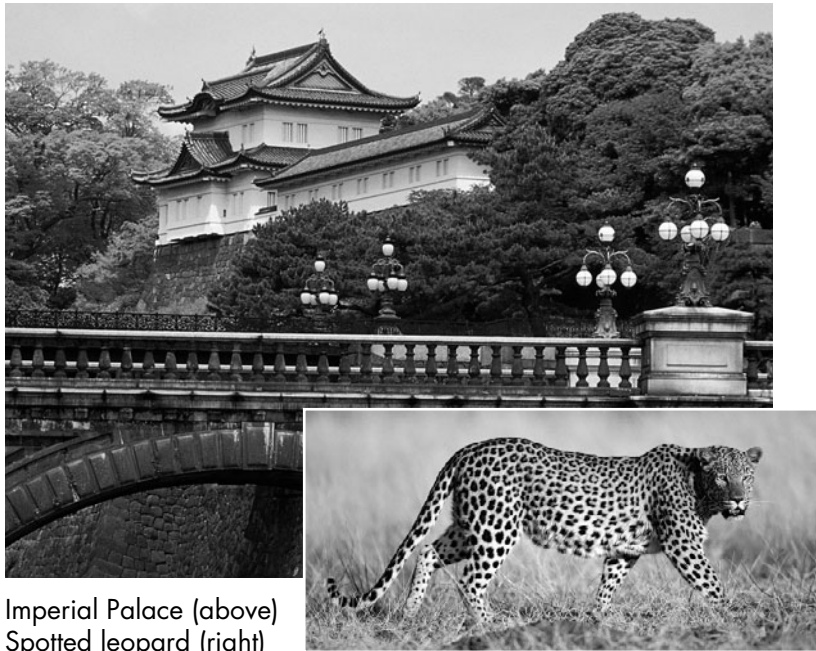


Tokyo: City of Electric Lights

The flight from Los Angeles to Tokyo, the capital of Japan, takes ten hours. It seemed like forever to me. I cuddled up on Wanda Lou's lap and took a long nap.

Finally, we arrived at Nakita airport. Since we are not citizens of Japan, we were considered **foreigners**. Wanda Lou had to stand in line to show her **passport**. It gave me a chance to get my first look at Japan. There were people walking everywhere in every direction. They bowed when they greeted each other, and they spoke in a language I didn't understand.

The first place we visited in Tokyo was the Imperial Palace. It is surrounded by a **moat** and a huge stone wall. Tourists are not allowed inside because the royal family lives there. So, we walked around the outside and saw the beautiful gardens.



Imperial Palace (above)
Spotted leopard (right)

Next, we took a monorail around the Tokyo Zoo. I saw a huge spotted leopard that looked like one of my relatives. He must have frightened Wanda Lou because she squeezed me. I meowed at him. He growled back.



That evening, we went shopping in the Ginza district, where there were tall buildings, modern stores, and a lot of neon signs. Wanda Lou bought a red **kimono** and a pink **obi** for herself. And a yellow silk scarf for me. I felt like one cool cat.

“Mmm! Something smells wonderful,” said Wanda Lou as she sniffed the delicious aroma of **tempura** coming from a nearby restaurant. I heard her stomach growl as she looked at the menu posted outside. The menu was written in Japanese, but she could tell from the pictures that they served **sushi** made with squid, eel, and octopus. We went inside. Wanda Lou ate tuna with ivory chopsticks. She offered some to me.



Though we liked Tokyo, it was time to leave. Wanda Lou bowed and said **sayonara** to our server and we hopped on a plane to China.



Tiananmen Gate is the main way people enter the Forbidden City.

Beijing: City of Extremes

Beijing, the capital of China, is the largest, oldest, and most mysterious place in the world. Wanda Lou was excited to see everything. Then, in the wink of a cat's eye, we were off to Tiananmen Square and the Forbidden City.

Tiananmen Square is the largest public meeting place in the world—big enough for a million people to gather. Nearby is the Forbidden City where emperors and their families lived and ruled for 500 years. Now it is open to visitors and thousands of them wander through the 9,999 rooms.

Some tourists were rude and shoved and pushed us, and I fell out of my carpetbag without Wanda Lou noticing. I tried to call her, but there were so many people and so much noise she didn't hear me. I was alone under a **pagoda** in the Forbidden City. I was sad. I wondered whether Wanda Lou would ever find me.



I waited and waited and tried not to be seen, but a Miss Chang saw me and picked me up. I was frightened. I didn't want a new owner. And then, Miss Chang held me up and said, "Here she is. Here's your lost kitty." Wanda Lou came running. She hugged and kissed me. I didn't even mind getting wet from her tears.



Miss Chang felt so sorry for Wanda Lou that she invited us to a Peking duck lunch. At lunch, she told us about some unusual Chinese customs. She said, in China, it is impolite to point the spout of a teapot at your guest. And it's bad luck to drop your chopsticks or place them on top of your bowl.

"That's very interesting," Wanda Lou said, as she took her chopsticks off her bowl and was careful not to drop them.

After lunch, Miss Chang took us to the Great Wall of China, which looks like a gigantic dragon winding 4,163 miles up and down mountains and across deserts. She told us it was built 2,000 years ago to defend China from its enemies.

As we walked along the wall, a little girl named Li saw me and said in English that was hard to understand, "That kitty is so cute. Can I hold her?" Wanda Lou said yes. Li carried me halfway up the hill. I liked Beijing.



Wow! Look at how long the Great Wall is.



Pandas eat tons of bamboo.

"Before leaving Beijing," Miss Chang told Wanda Lou, "you must see the giant pandas. Perhaps Li would like to join us." Li was delighted to go to the Beijing Zoo. So were we. We watched the roly-poly bears munch on bamboo, do somersaults, and wrestle with each other.

I thought they would be fun to play with, but Wanda Lou said it was time to go. We said **zai jian** to Miss Chang and boarded a plane for Bangkok, Thailand.

Bangkok: City of Angels

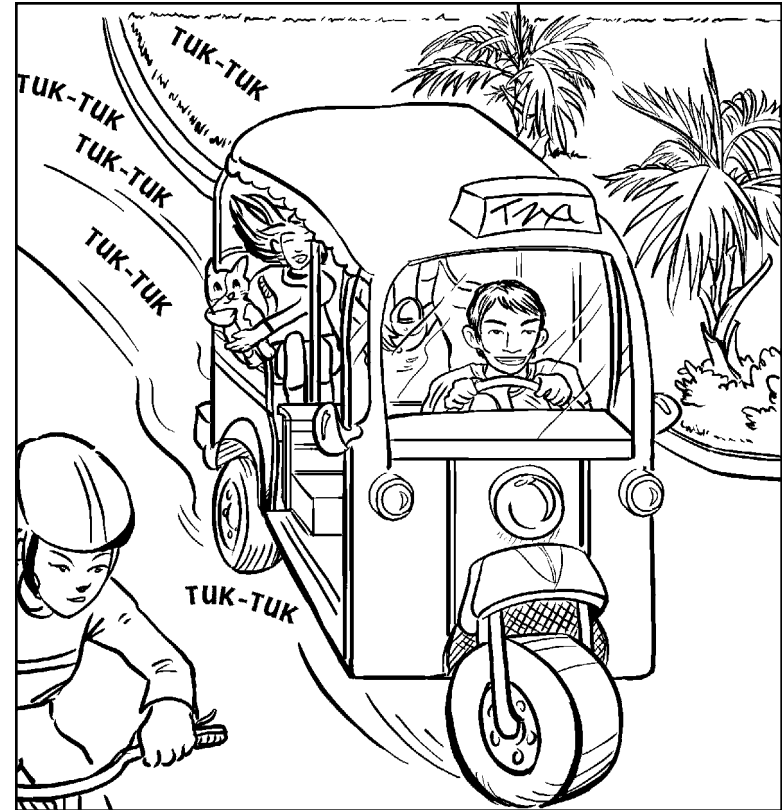
People in Thailand call Bangkok the “City of Angels”—the same as Los Angeles. I thought it looked like a picture from a book of fairy tales. The Grand Palace has golden **spires**, glittering mosaics, and mystical statues. There are statues of fat cats and skinny dogs and ferocious demons.

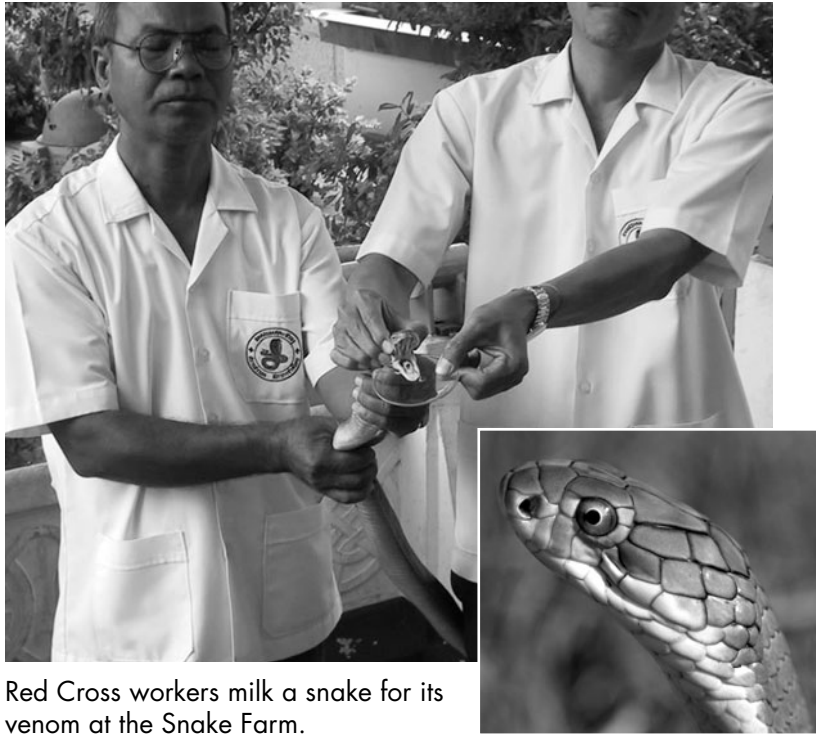
Then there is the Reclining Buddha that is so huge he looks like a gold jet plane, lying on his side. The Emerald Buddha is much smaller but very beautiful. He’s carved out of one piece of jade. The Thai people love him so much that they dress him in different clothes according to the season.



The Reclining Buddha is about the length of half a football field.

Getting around Bangkok was quite easy for Wanda Lou and me. There were taxis, buses, an air-conditioned sky train, and boats on the river. We took a **tuk-tuk** to Suan Lumpini. It’s a park where people fly kites, jog, and lift weights. A tuk-tuk is a noisy three-wheeled taxi that swerves from left to right. It went so fast that Wanda Lou had to hold onto me so I wouldn’t fall out.





Red Cross workers milk a snake for its venom at the Snake Farm.

In Suan Lumpini, we went to the Snake Farm. We saw boas, pythons, and vipers. But it was the king cobras that scared me the most. They were so huge. I think they could swallow me down in one gulp. Actually, these snakes are very valuable because their **venom** is used for antivenom to cure snakebites.

Some people in Bangkok live in the modern part of the city. Others live on the river. That's where we headed next.

We boarded a long-tailed boat and sailed down a **klong**. People live in homes on the banks of the canal. We saw them washing



A klong

their clothes, bathing their babies, cooking their meals—even watching television and talking on cell phones. Vendors paddled their floating shops from home to home selling all sorts of things. They sold handwoven fabrics, tropical fruits like uglis that are

smelly but sweet, and steaming bowls of noodle soup. The people were so friendly. I was deciding I liked Bangkok best of all when Wanda Lou said, “Time to go home, Cali.”

As the plane took off, we sadly said farewell—sayonara to Japan, zai jian to China, and **sawatdi** to Thailand.

There's No Place Like Home

Finally, we were at home in our little house, which is no Imperial Palace, on our narrow street, which is no Great Wall, where there are no boas or cobras and nothing unusual like floating shops. I concluded that traveling with Wanda Lou is great and meeting people from other parts of the world is fun, but there's still no place like home.



Glossary

foreigners	people from another country (p. 6)
kimono	a Japanese robe or gown (p. 8)
klong	a canal in Thailand (p. 18)
obi	a sash worn with a kimono (p. 8)
moat	a wide trench around a building filled with water (p. 7)
pagoda	a tower with a curving roof (p. 11)
passport	a government document needed to enter another country (p. 6)
sawatdi	Thai for "hello" or "good-bye" (p. 18)
sayonara	Japanese for "good-bye" (p. 9)
spires	the pointed tops of buildings or towers (p. 15)
sushi	a bite-sized block of rice topped with raw fish (p. 9)
tempura	battered, fried fish or vegetables (p. 9)
tuk-tuk	a three-wheeled taxi in Thailand (p. 16)
venom	poison usually from a snake (p. 17)
zai jian	Mandarin Chinese for "good-bye" (p. 14)

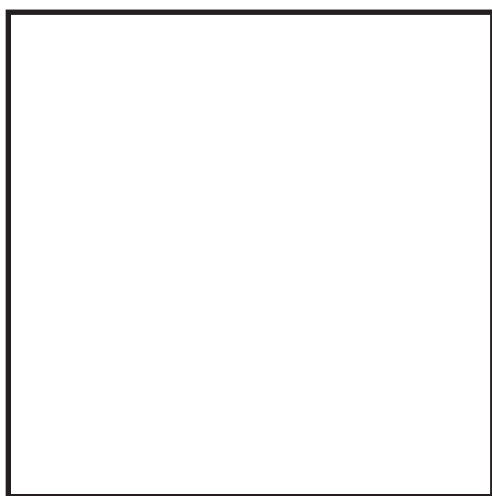
Name _____

Instructions: Cut apart and staple the pages together to create a passport. Write what you learned about each city on the appropriate page. Draw a picture of the object(s) listed in the space provided on each page.



My Passport

Name _____

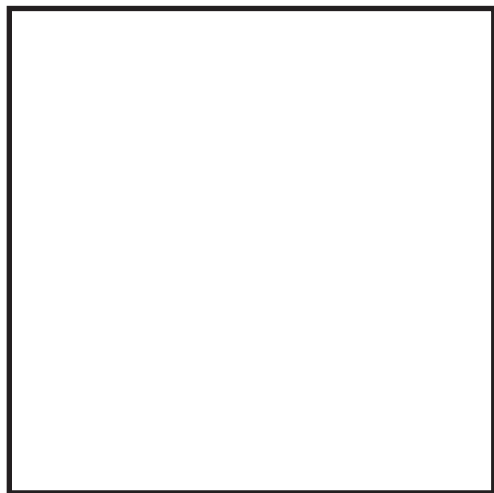


a kimono and obi

What I learned: Tokyo



Name _____

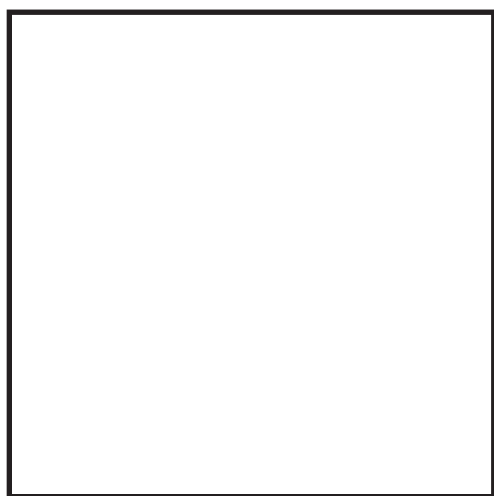


a pagoda

What I learned: Beijing



CALI AND WANDA LOU • LEVEL T • 1B



a tuk-tuk and a klong

What I learned: Bangkok



SKILL: ASK AND ANSWER QUESTIONS

Name _____

Instructions: Read each question about the story *Cali and Wanda Lou*. Use clues from the text and your prior knowledge to make inferences. Write each inference and the supporting information on the lines below.

Did Wanda Lou go on her trip with anyone else besides Cali? Inference:	Text: _____ _____ Prior Knowledge: _____ _____
How does Wanda Lou feel about losing Cali? Inference:	Text: _____ _____ Prior Knowledge: _____ _____
Why do so many people live along the canals in Bangkok? Inference:	Text: _____ _____ Prior Knowledge: _____ _____
Is Cali a real cat? Inference:	Text: _____ _____ Prior Knowledge: _____ _____

Name _____

Instructions: Write *C* on the line if the sentence is a compound sentence and *NC* if the sentence is not a compound sentence. Circle the conjunction that separates the two parts of each compound sentence.

_____ 1. Wanda Lou likes mysterious places,
strange sights, and rare animals.

_____ 2. Some tourists were rude and shoved and
pushed us, and I fell out of my carpetbag.

_____ 3. Nearby is the Forbidden City where emperors and their
families lived and ruled for 500 years.

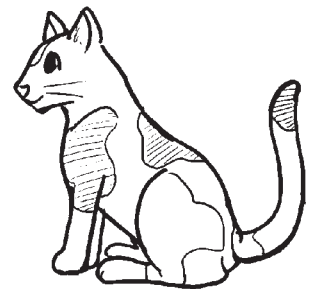
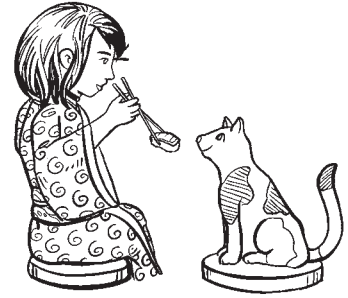
_____ 4. Wanda Lou bought a red kimono and a pink obi for herself.

_____ 5. I tried to call her, but there were so many people
and so much noise that she didn't hear me.

_____ 6. The Grand Palace has golden spires, glittering
mosaics, and mystical statues.

_____ 7. I waited and waited and tried not to be seen,
but Miss Chang saw me and picked me up.

_____ 8. Meeting people from other parts of the world
is fun, but there's still no place like home.



Name _____

Instructions: Write the definition of each base word. Then add the suffix *-ful* to each base word and write the new word in the appropriate box. Use each new word in a sentence.

Words	Definition	New Words	Sentences
forget			
pain			
skill			
success			
thank			

Money in the USA

A Reading A-Z Level T Leveled Reader

Word Count: 1,319



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Money in the USA



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Making Money

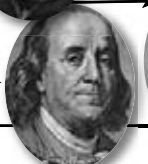
Money is something that people living in the United States today cannot survive without. People use money to purchase things they need to live, such as food and shelter. People also use money to purchase things they want, but do not necessarily need to survive.

The money used in the United States is different from the money of other countries. Each country has its own **currency** system. The system in the U.S. is based on a decimal system that uses dollars and cents.



A part of the government, known as the **Federal Reserve**, issues all money in the United States. But the Federal Reserve does not make money. Money is actually made by two other organizations: one is the U.S. Mint, which makes coins, and the other is the Bureau of Engraving and Printing, which makes the notes, or bills.

COINS	
Penny:	Abraham Lincoln → 
Nickel:	Thomas Jefferson → 
Dime:	Franklin D. Roosevelt → 
Quarter:	George Washington → 
Half-Dollar:	John F. Kennedy → 
Dollar:	Susan B. Anthony → 

NOTES	
\$1	George Washington → 
\$2	Thomas Jefferson → 
\$5	Abraham Lincoln → 
\$10	Alexander Hamilton → 
\$20	Andrew Jackson → 
\$50	Ulysses S. Grant → 
\$100	Benjamin Franklin → 

United States currency has a design that makes it different from other currencies in the world. The money used in the U.S. is highly symbolic of American values and history. For example, all coins and notes feature a portrait of someone important in the history of the United States.

Banking and Mint Marks

Once notes and coins are made, they are shipped to banks that are run by the Federal Reserve, which is the central bank of the United States. Twelve Federal Reserve banks are located across the nation and make up our national bank system.

Just as people might have a checking account at a private bank, private banks have checking accounts with Federal Reserve banks. Private banks use these accounts to buy notes or coins whenever they need them for their customers.



People cash checks and get change in banks through a teller.

The U.S. Mint does not decide which coins to produce and the Bureau of Engraving and Printing does not decide which notes to print. Neither has the authority to start or stop producing a unit of currency. The U.S. Mint produces between 11 billion and 20 billion coins each year while the Bureau of Engraving and Printing produces about 37 million notes each day. Congress decides the **denomination** of the currency to be produced and circulated.



Look at a U.S. dollar or coin and you can tell where it originated. All coins get a “mint mark,” or a letter code that tells where the coin was made. If you see a “P” on the front of a coin, to the right of the portrait, as on the coin on page 8, the coin was minted in Philadelphia. A “D” means it came from Denver, an “S,” from San Francisco.

Origin of notes		
Bank	Letter	Number
Boston	A	1
New York City	B	2
Philadelphia	C	3
Cleveland	D	4
Richmond	E	5
Atlanta	F	6
Chicago	G	7
St. Louis	H	8
Minneapolis	I	9
Kansas City	J	10
Dallas	K	11
San Francisco	L	12

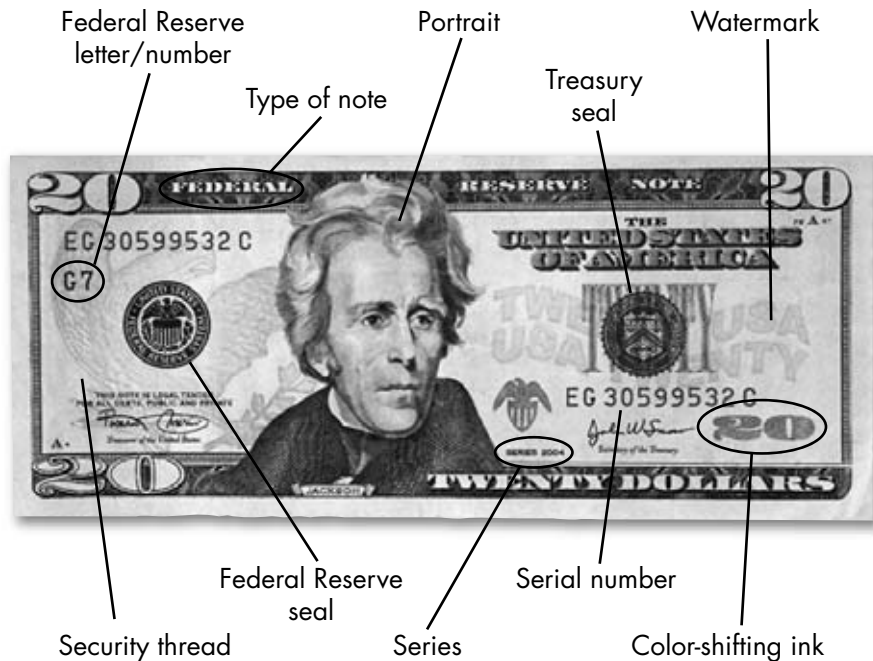
Dollar bills made before 1996 have a regional seal with the name of the Federal Reserve bank that issued the note. Since 1996, notes show the Federal Reserve bank of origin through a new seal that includes a letter and number below the serial number.

Counterfeiting

Almost as soon as the Bureau of Engraving and Printing began producing notes, criminals began counterfeiting them. The U.S. Treasury created the Secret Service in 1865 to control **counterfeiters**. In the United States, counterfeiting is a federal crime that is punishable by up to 15 years in prison.

Advanced printing methods prompted the U.S. government to change the design of paper money in 1996 to stay ahead of counterfeiters. This was the first significant design change to paper money in 67 years. From now on, new designs will be created every seven to ten years.





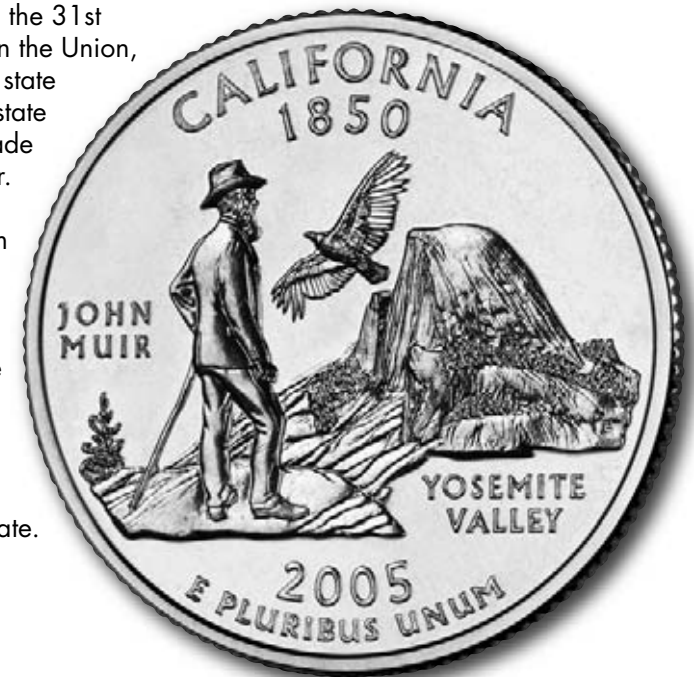
Anyone can learn how to check whether or not notes are counterfeit. The three security features that you can check to authenticate notes are: watermarks, color-shifting ink, and security thread.

The watermark is a faint image in the background of a bill. Color-shifting ink on the numeral in the corner of the bill changes color from copper to green when a note is tilted up and down. Finally, a security thread runs vertically through every new note issued since 1996.

Paper money created since the redesign in 1996 still has the same historical figures and national symbols as the old series. The new bills also are the same size and texture as notes created before 1996.

Like notes, coins have also had design changes over the years. Congress occasionally directs the U.S. Mint to create newly designed editions of coins. Congress also occasionally directs the U.S. Mint to create commemorative coins that are completely new.

California, the 31st state to join the Union, is the 31st state to have a state quarter made in its honor. Every 10 weeks from 1999 to 2008, the design on the reverse side of the quarter changed to honor a different state.





A worker at a mint loads bags of coins to ship to banks.

Perhaps the biggest change in coins over the years has been the **precious metals** of which they are made. Early U.S. coins were made of gold, silver, or copper. In its first year, the U.S. Mint produced 11,178 copper cents. It was not long before the U.S. Mint began producing coins in silver and gold, too.

Today, only very small amounts of copper, nickel, and zinc are used in the making of U.S. coins. Gold is only found in antique coins.



Do You Know?

Coins last longer than bills. The life expectancy for a circulating coin is 30 years, whereas paper money lasts just 18 months!

Recycling Money, Collecting Money

Money does not last forever. Paper money is routinely deposited by private banks into Federal Reserve banks which then destroy notes that are too worn for use. Some paper money is recycled into other products, such as stationery.

As for coins, the U.S. Mint does not repurchase used coins. It will, however, pay for **mutilated** coins, but only for their value as scrap metal. Federal Reserve banks will replace old, worn coins with new coins of the same denomination and will then forward the old coins to the U.S. Mint to be recycled.

Some U.S. money is never spent, exchanged, or recycled. Instead, it is kept in collections by numismatists, or coin collectors. Collectors keep notes and coins in hope that they will increase in value. The U.S. Mint also produces commemorative coins that collectors purchase.

Commemorative coins are special coins that are issued to honor a person, place, institution, or event in history. Collectors may also collect **numismatic** coins that were issued as standard coins. Commemorative and numismatic coins are valued by their rarity, condition, and age.



The first U.S. commemorative coin featured Christopher Columbus. It was made to coincide with the World's Columbian Exposition in Chicago in 1893.

Congress authorizes the U.S. Mint to produce commemorative coins. Congress decides who or what will be featured on commemorative coins as well as how many of these special coins will be produced.

Commemorative coins are not produced for circulation. They can be used as **legal tender**, but their **face value** is not the same as their appraised value. For example, a 1935 Hudson, N.Y., Sesquicentennial half dollar has a face value of 50 cents but was sold for \$1 when it was first issued. Now it sells for

between \$1,000 and \$5,000. Money made from the sale of commemorative coins is used to fund special projects.



The restoration of the Statue of Liberty was partially funded by sales of commemorative coins that had a picture of the Statue of Liberty.

Standardizing Money

When our nation was first formed, its economy depended largely on a mixture of foreign coins. Beginning in 1775, the Continental Congress issued currency to pay for the Revolutionary War. These notes, called Continentals, quickly became devalued because they were easily counterfeited and were not backed by gold or silver.



On April 2, 1792, the United States Congress passed The Mint Act. For the first time, currency in the United States became standardized. Since then, U.S. coin production has grown from 1,500 coins a year to more than 11 billion coins a year, and the United States dollar has become one of the strongest currencies in the world.

The amount and type of money made in the United States has changed over the years. From Congress, to the U.S. Mint and the Bureau of Engraving and Printing, to the Federal Reserve banks, the government keeps coins and notes circulating and the value of U.S. money safe.



Using ATMs is one of the easiest ways to get money.



About \$350 million per month is spent in U.S. grocery stores.

Many designs on money have changed to honor people and events in U.S. history. Security features have changed to keep counterfeiters from being able to use fake bills. New rules to keep pace with new technology mean the future holds further changes for U.S. currency. However, the function of money in the United States will remain the same.

People will still use money to buy what they need and some of what they want. The use of money has become part of everyday life.

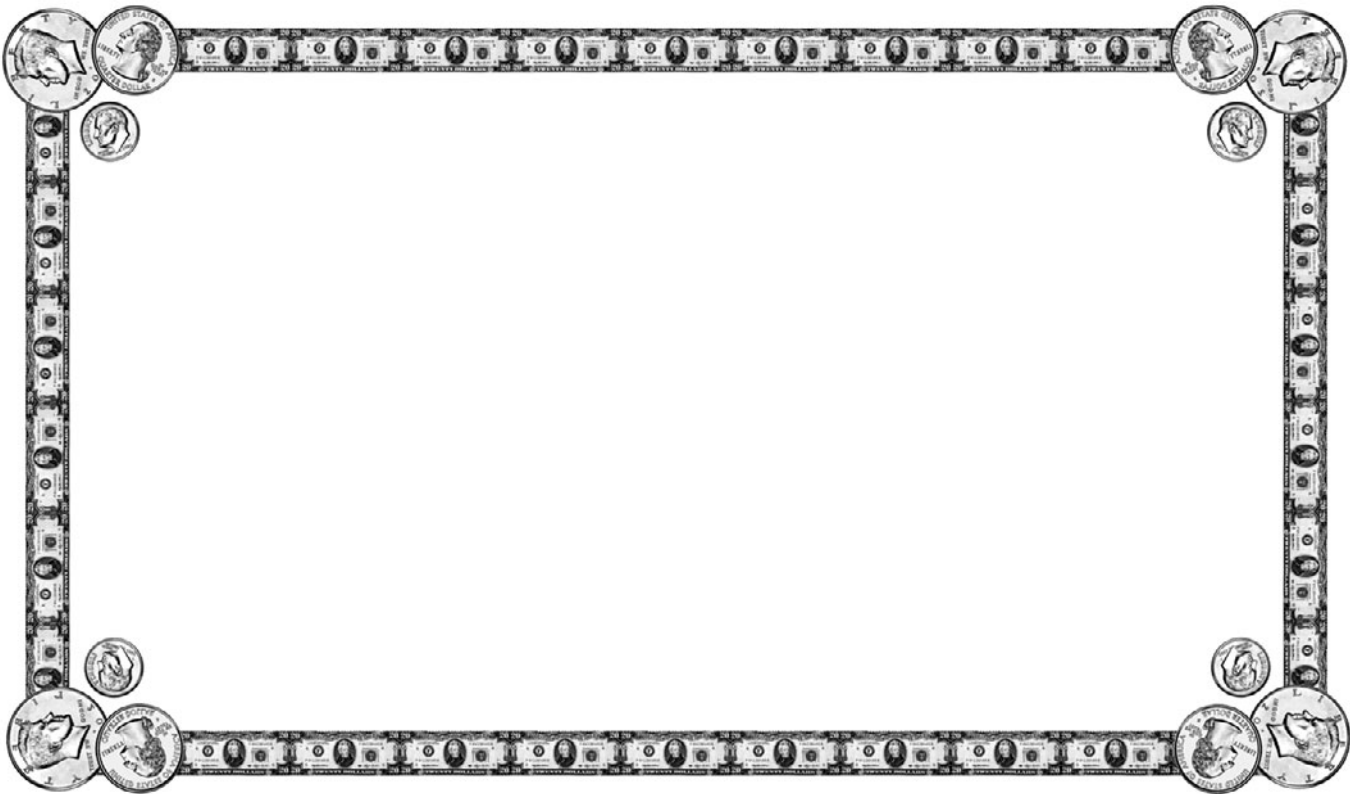
Glossary

counterfeiters	people who produce false currency (p. 10)
currency	money, in any acceptable form (p. 5)
denomination	the face value for a type of currency (p. 8)
face value	a number or phrase that appears on a coin or note telling its worth (p. 16)
Federal Reserve	the U.S. banking system (p. 5)
legal tender	money that people must accept within a country (p. 16)
mutilated	coins that are badly chipped or melted (p. 14)
numismatic	currency collected because of its rarity and historical significance, instead of the value printed on it or the metals contained (p. 15)
precious metals	metals that are highly valued because of their rarity (p. 13)

Name _____

Instructions: In the box below, write the important details you underlined in the chapter. Use the details to write a main idea sentence about the chapter on the line. Then use the main idea and details to write a summary of the chapter.

Chapter Title: _____



MONEY IN THE USA • T • 1

Main idea: _____



Summary: _____

SKILL: MAIN IDEA AND DETAILS/SUMMARY

Name _____

Instructions: Use your book to locate five adverbs. Then use each word to complete the adverb chart below. One example is done for you.

Adverb	Page	Root Word+ Suffix	Word Described
occasionally	12	occasional + ly	directs



Name _____

Instructions: Use the dictionary to locate and write the meaning of each word in the chart. The part of speech is included next to each word. Then add the prefix *re-* to each word and use the new word correctly in a written sentence.

Word	Definition	New Word	New Word in a Sentence
paint (v)			
use (v)			
do (v)			
count (v)			
send (v)			

C Is for Canada

A Reading A-Z Level T Leveled Reader

Word Count: 1,357




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Subject: Greetings from Canada I

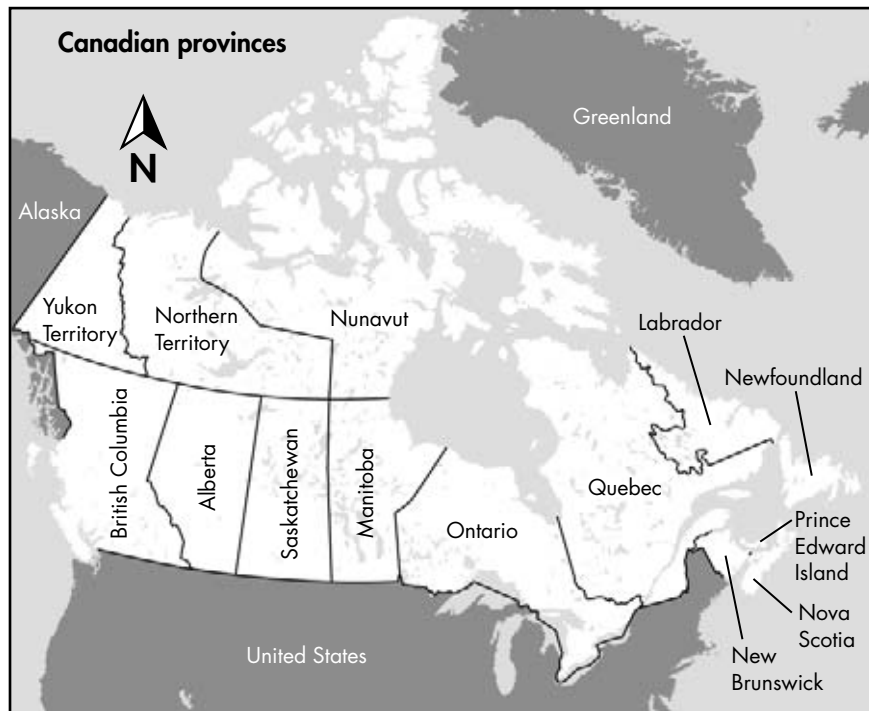
Hey Stephanie,

It was so exciting to get your email yesterday! I've been looking forward to having a pen pal for some time now. I'm so glad your teacher in Omaha (that's in Nebraska, right?) contacted mine here in Vancouver (that's in British Columbia). Do you know where that is?

British Columbia is one of the 10 **provinces** in Canada (there are three **territories**, too). We don't have states like the United States.

Anyway, in your last email, you said that you are doing a report on Canada. Is this the kind of information that you're looking for? If not, could you be more specific? I hope I can help.

Your Canadian pen pal,
Jacqueline



Subject: My questions

Hi Jacqueline,

Good to hear from you. Here, let me list some of the topics that my teacher wants covered in the report so that you have a better idea of what information I am looking for: people, economics, government, history, culture, religion, and physical geography. Hope that's not too much.

So, what's your family like? My dad sells animal feed and my mom is a waitress at the truck stop outside of town. Do you have any brothers or sisters? I don't.



Thanks so much for doing this, and I can't wait to tell you about Omaha and the United States for your report next month.

Your friend,
Stephanie

Subject: My family

Hey Stephanie,

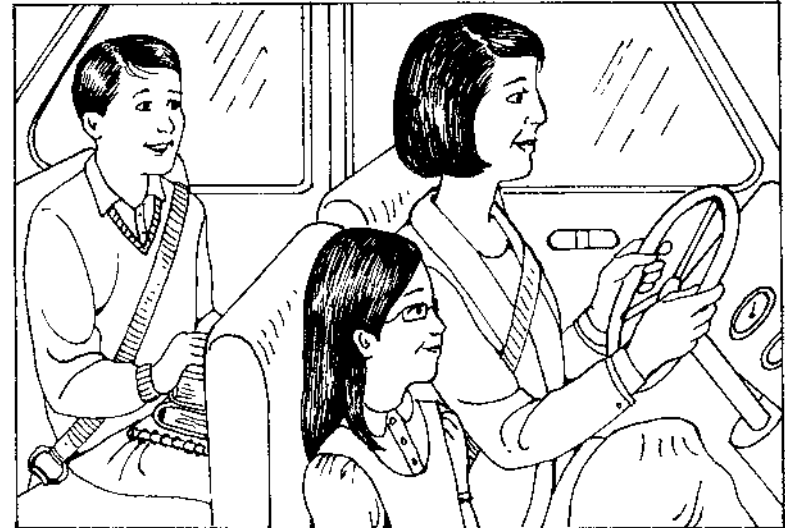
Wow, that is a lot of information to cover! How about this: I'll start by talking about my family (that will at least cover your "people" section) and then maybe that will help answer some of the other sections. Okay?

My dad is a fisherman in English Bay. He leaves before I wake up for school because he says he has to get to the Bay before the fish wake up! Vancouver has the largest port in North America, as far as exports go. It also rarely freezes, so my dad works year-round.



Fish are a major resource here. My dad says Canada exports about 80 percent of its fish. Other resources are iron ore, nickel, zinc, copper, gold, silver, coal, and oil. I found that information online at Statistics Canada (you may want to check it out).

My mom drives my brother and me to school every day. She's a French teacher (both English and French are the official languages here) at my brother's school. He's in 12th grade, so next year he will go to college. Some of my classmates take the bus or the train to get to school, and a few ride their bikes. School starts at 8:30 and ends at 3:00.



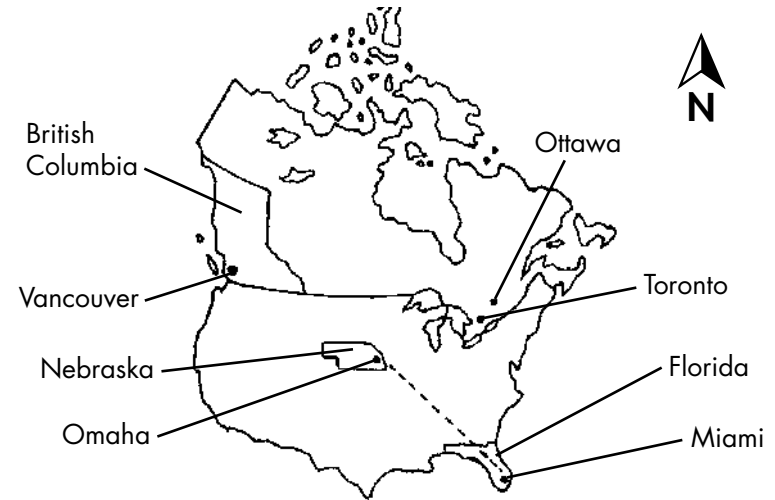
I'm in 4th grade, like you, and my most favorite class is social studies. Right now we're studying the Canadian government, lucky for you! Let me give you some facts about the government from my notebook.

Canada is a **democracy**, a government run by the people, just like the United States, but we're a **confederation**, not a **republic** like you. I think the difference is that our provinces are more independent than your states.

We also have a **constitutional monarchy** in which the king or queen of England is our chief of state. The prime minister leads **Parliament** (no president here). Canada's Parliament is made up of two houses, the Senate with 104 members and the House of Commons with 301 members. Hope that helps a little.

I have to go (my mom is calling me because it's time for lacrosse practice). I'll try to answer the rest of your questions when I get back.

Talk to you soon,
Jacqueline



Subject: Lacrosse?

Hi Jacqueline,

Thanks so much. What's lacrosse? Is it like soccer? That's what I play.

My mom was wondering where your grandparents are from. My grandparents are from Germany.

What do you do for fun? Every summer, my family goes to Florida and relaxes on the beach. Do you take any family vacations? Canada sounds so cool. Hope practice was fun.

Your friend,
Stephanie

Subject: Family heritage, family vacation

Hi Stephanie,

Practice was tough, I'm pretty tired, but I think I'm even more hungry. My mom is upstairs cooking dinner—we're having caribou. She learned how to make it from my grandpa who was **Inuit**. Looks like I'm starting to answer your family **heritage** questions.

Before I do that, I should tell you that, yes, I do play soccer but only in gym class, and it's not as fun as lacrosse. Lacrosse is kind of like soccer, but we use sticks with baskets on the end to pass the ball to another player or hopefully into a goal that's much smaller than a soccer goal.



Okay, back to my family. My dad's **ancestors** are from England. He can trace them as far back as the Klondike Gold Rush of 1897! My mother's father was Inuit, like I said, but her mother was of French descent—and that's why she knows French so well. To answer your religion question, most Canadians are Roman Catholic. Many others are Protestant, like us, or another Christian religion. Only a small number of people are Muslim, Jewish, Buddhist, or Hindu.

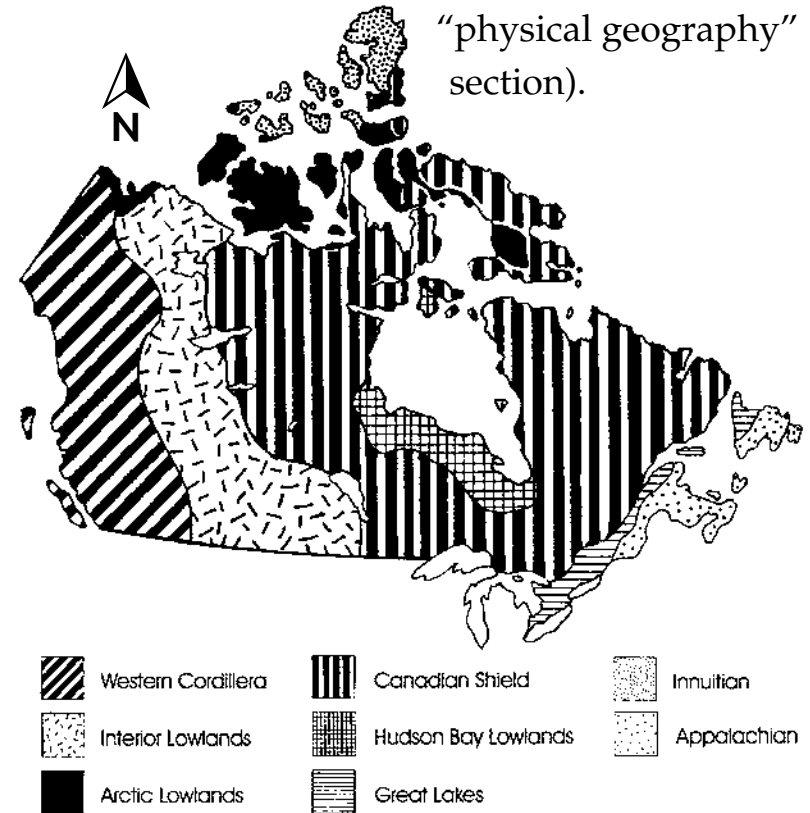


Two Englishmen pan for gold during the Klondike Gold Rush.



Yes, we take family vacations. This past summer we went to Mount Logan in the Yukon's Kluane National Park. The mountain rises to 5,959 meters (19,551 feet to you), which makes it the highest point in Canada. I was hoping that we would travel all the way across the country, all 9,984,670 square miles, but my mom and dad said that was too far. Did you know that Canada is the second largest country in the world?

Canada has eight land regions: the Canadian Shield, the Hudson Bay Lowlands, the Western Cordillera, the Interior Lowlands, the Great Lakes-St. Lawrence Lowlands, the Appalachians, the Arctic Lowlands, and the Innuitians. Since we headed straight north from Vancouver, we stayed in the Western Cordillera land region. The scenery in this region is amazing. There are so many mountains (I hope this is helping with your "physical geography" section).

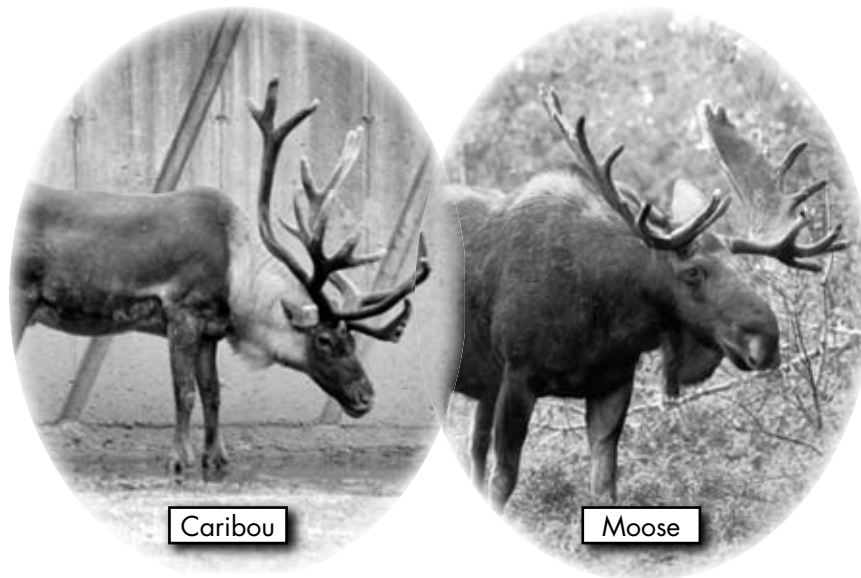




The two regions I really want to see sometime in my life are the Canadian Shield and the Great Lakes-St. Lawrence Lowlands. The Canadian Shield is the largest land region in Canada—it covers about half of the country! There are plains, mountains, and many ancient rocks there. The Great Lakes-St. Lawrence Lowlands is mostly rolling lowlands. This is where Niagara Falls and Canada's main river, the St. Lawrence Seaway, are located. This area is often called Canada's heartland because it is a center for agricultural production and industry (isn't that kind of like Omaha?).

Dinner's ready, so I have to run (it smells great). As soon as I'm done, I'll finish answering the rest of your questions. Here I come, **caribou** stew!

Jacqueline



Subject: Caribou or Moose?

Hi Jacqueline,

I had no idea Canada was so big, and I've never heard of caribou. Online, they look like moose. Is that true?

We have lots of deer here. Sometimes my friends and I see them in our backyards.

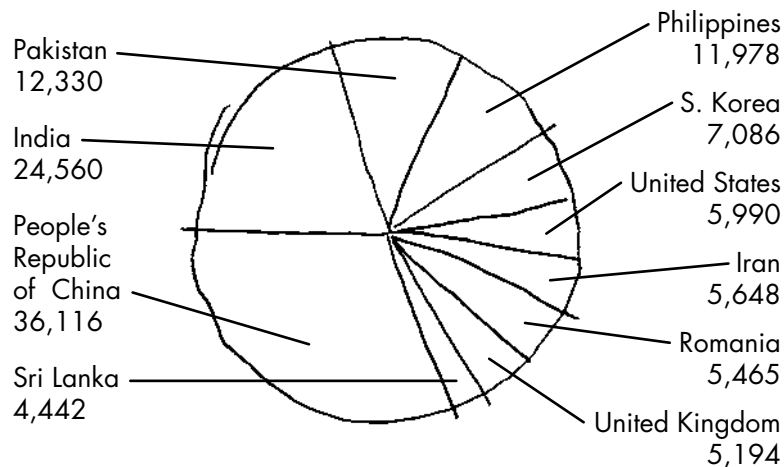
What are your friends like? Talk with you soon.

Your friend,
Stephanie

Subject: Come visit!]

Hi Stephanie,

Many of my friends are on the lacrosse team but my best friend Li is not. He's from China. Did you know that a lot of people immigrate to Canada from Asian countries? Each year when school starts, I look around my classroom and see more kids who are Asian. I worked on an immigration graph with Li in Math class last year that showed the number of people who came to Canada in 2003. I am sending you a copy of the graph we made (my mom helped me scan it to the computer). If you can't open it, please let me know.



You know what? I just looked at your original list of things your teacher wanted for this report, and I think we talked about all of them, except for history. I'll go bug my dad for that (he's a big history buff). Here, he just scanned me a timeline from one of his history books. I'll attach it too.

9,000 B.C.	Artifacts show that native Canadians are living in the present-day Ontario area.
A.D. 986	The first European, a Viking named Bjarni Herjolfsson, sees the Labrador coastline.
1608	Samuel de Champlain ("Father of New France") founds Quebec City, which is the first permanent English settlement in Canada.
1610	Henry Hudson explores Hudson Bay.
1702	The French and British battle in Queen Anne's War.
1818	The Canada-U.S. border is established at the 49th parallel.
1841	An Act of Union brings together Upper and Lower Canada, creating the Province of Canada.
1867	Sir John A. Macdonald is the first Prime Minister of the Dominion of Canada.
1897	The gold rush begins in the Yukon.
1931	Great Britain gives Canada full authority over legislative matters.
1965	Canada issues a new flag.
1989	The Canada-U.S. Free Trade Agreement starts.
1999	The Inuit Territory of Nunavut is created.



Hope I helped you with your report. Maybe this next summer, you could persuade your family to come visit Canada instead of Florida. You could visit Ottawa (the national capital) or Toronto (the largest city), but let's face it, Vancouver is the prettiest place to be in the summer. You'd love it. Can't wait to hear about Omaha and the United States next month. Take care.

Your friend,
Jacqueline

Glossary

ancestors	people from whom one descends (p. 12)
caribou	a type of large reindeer that lives in very cold places (p. 15)
confederation	a group (of provinces) that is unified but still has individual independence (p. 9)
constitutional monarchy	a government in which a parliament oversees the power of a king or queen (p. 9)
democracy	a government in which the people vote for other people to represent them (p. 9)
heritage	something that is passed down from generation to generation (p. 11)
Inuit	a member of a group of native peoples living near the Arctic, such as northern Canada, Greenland, or Alaska (p. 11)
Parliament	a group representing the people that makes laws (p. 9)
provinces	lands divided up by a country (p. 5)
republic	a nation led by a president and governed by elected representatives (p. 9)
territories	lands controlled or owned by another country (p. 5)

Name _____

Instructions: As you read, think about the author's purpose for writing *C Is for Canada*, and then check the appropriate box(es). Write examples from the text to support your thinking in the *Evidence* column.

☐ To Inform	Evidence:
☐ To Inform	Evidence:
☐ To Inform	Evidence:

Name _____

Instructions: As you read, identify the important information for each chapter. Record this information under the headings *Who*, *What*, *When*, *Where*, and *Why*. Then use the information from one of the chapters to write a short summary on the back of the worksheet.

Why					
Where					
When					
What					
Who					

Name _____

Instructions: Identify the sentences below that are compound sentences by writing C on the line. Write NC on the line for sentences that are not compound sentences. Circle the conjunction in each compound sentence. Then write two compound sentences on the lines below.

- _____ 1. Canada's Parliament is made up of a Senate and a House of Commons.
- _____ 2. My dad's ancestors are from England, and he can trace them back to the Klondike Gold Rush.
- _____ 3. Every summer, my family goes to Florida and relaxes on the beach.
- _____ 4. Some of my classmates take the bus, but I like to ride my bike.
- _____ 5. We were headed north from Vancouver, so we stayed in the Western Cordillera region.
- _____ 6. We planned to visit the Canadian Shield next, yet I wished we could see the Great Lakes-St. Lawrence Lowlands.
- _____ 7. I play soccer and lacrosse in school.
- _____ 8. Vancouver is the prettiest place to be in the summer, and I know you'll love it!

Sentence #1: _____

Sentence #2: _____



Name _____

Instructions: Draw lines to match words in the left-hand column with words in the right-hand column to create compound words. Then write the compound words you created on the lines at the bottom of the page.



out	body
up	line
some	shore
low	man
coast	side
rail	time
fisher	stairs
sea	place
any	road
every	lands



Special Effects

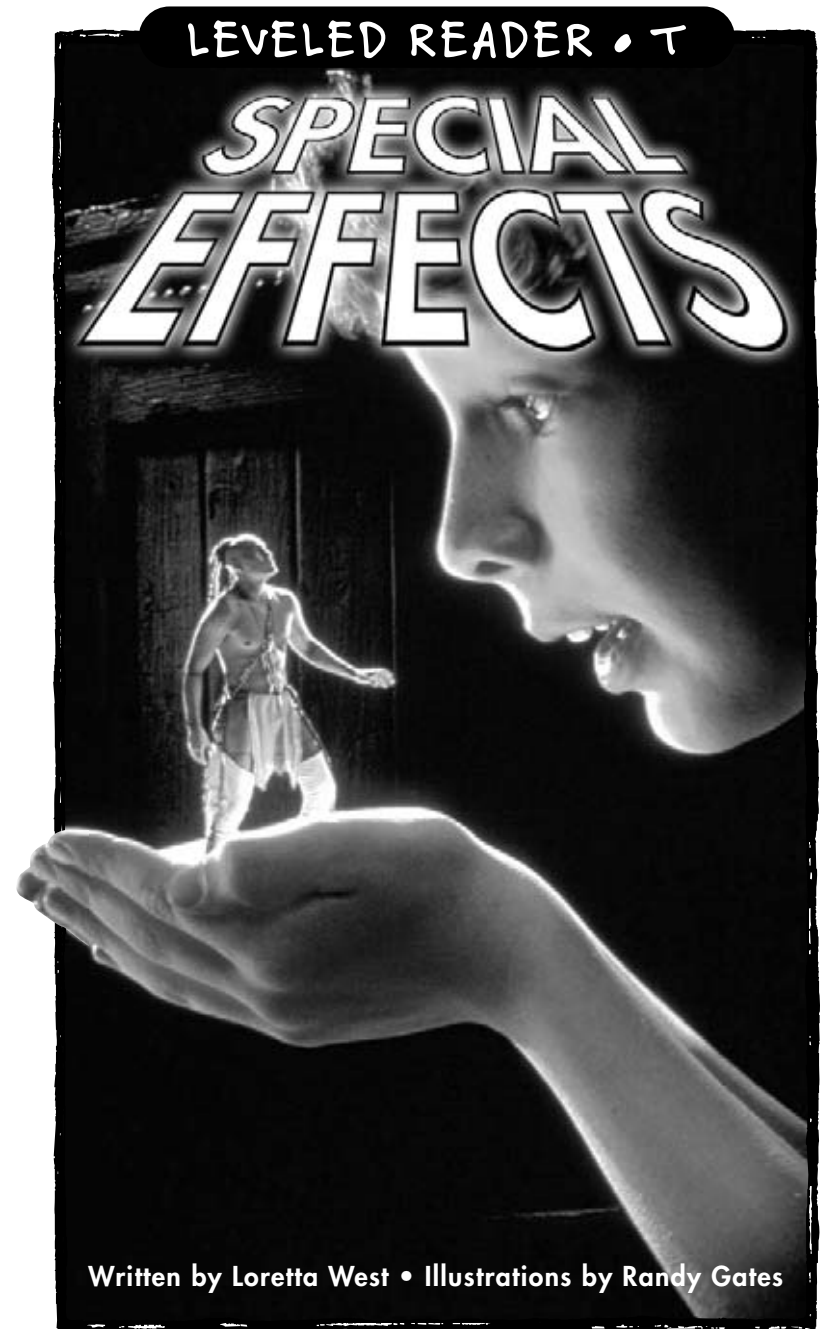
A Reading A-Z Level T Leveled Reader

Word Count: 1,238




Reading a-z

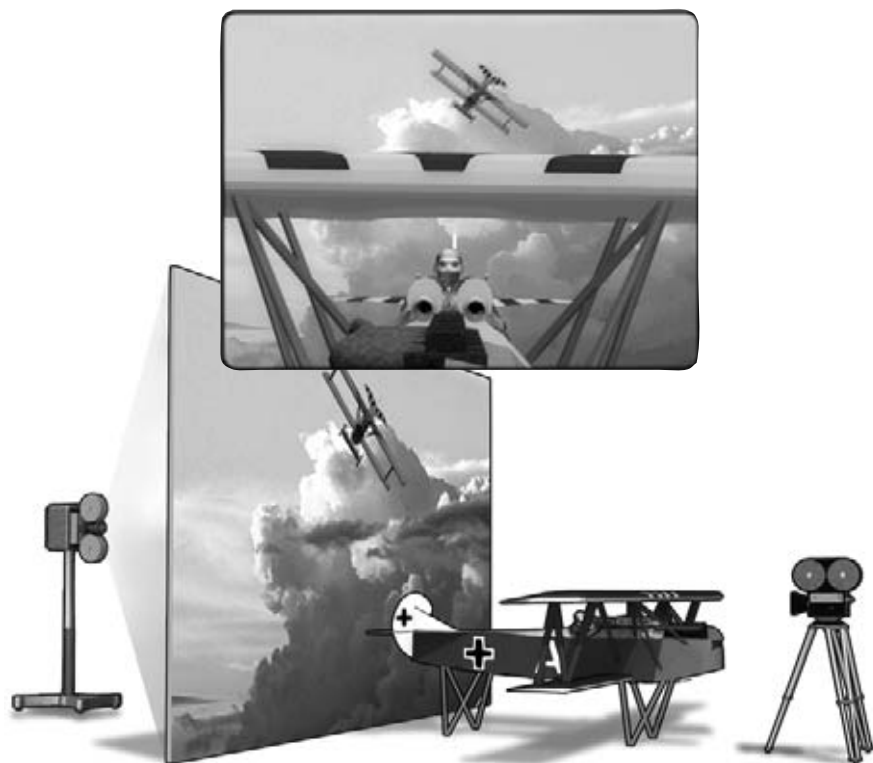
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SPECIAL EFFECTS



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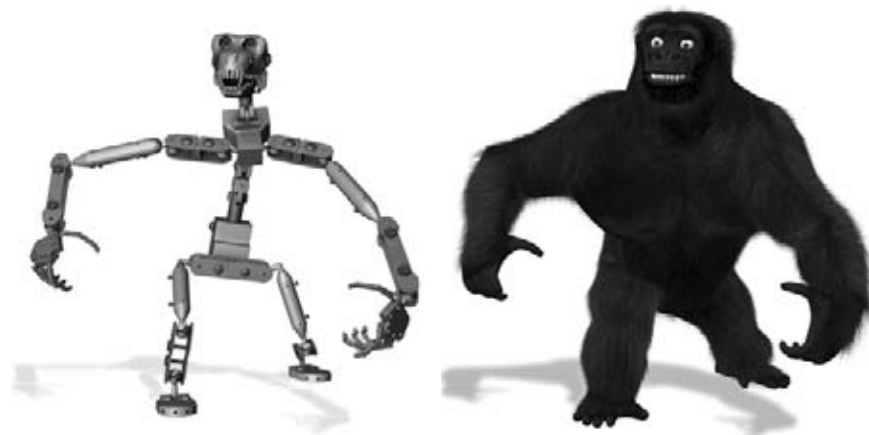


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Introduction

The gigantic ape stands high above New York City on the very top of the Empire State Building. He has carried with him a blonde woman—he holds her in one of his massive paws. The ape gently puts the woman inside the building, thumps his chest, and roars menacingly at the squadron of planes circling just outside his reach.

He strikes out at one of the planes, sending it spiraling to the ground in a ball of fire. The other planes attack, firing bullets at the huge creature. Some of the bullets hit and the ape is badly wounded. He lets out one last roar and lets go of the building, falling to the street.

The scene we've described is from the movie *King Kong* and was made more than 70 years ago! The movie would never have been possible if it hadn't been for Willis O'Brien. A master of movie **special effects** in the 1920s and the 1930s, he helped create the special effects spectacles that audiences still love.



A close-up of the gorilla model sculpted by John Cerisoli for the 1933 film *King Kong*.

So, what are special effects? Special effects are the part of moviemaking that creates, or makes, pictures and sounds that can make movies seem real. Special effects allow a superhero to rescue anyone, anywhere, at any time. Special effects can create alien spacecraft soaring toward Earth at an alarming speed. Special effects can make buildings crumble, tornadoes twist, and dinosaurs, long extinct, come alive.

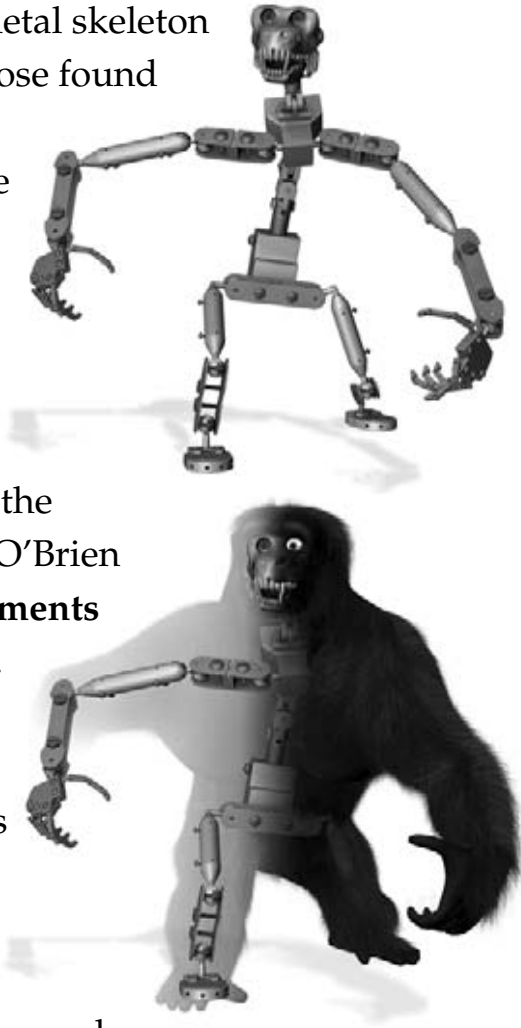
Movies, or moving pictures, work by capturing a series of still images and replaying them quickly one after the other.



The T-Rex shows his fierce teeth in this special effects scene from *The Lost World: Jurassic Park* (1997).

Stop-Motion Animation

So, how did O'Brien make *King Kong* possible? First, he constructed several gorilla **models** using a metal skeleton with joints like those found in human knees and shoulders. He padded the joints with cotton and foam rubber, and then covered them with rabbit skins to resemble the beast's fur. Next, O'Brien studied the **movements** of gorillas in zoos. He also attended professional wrestling matches looking for ideas of how to make his creature battle the dinosaurs and other huge animals on Skull Island, King Kong's home.



O'Brien's special effects team then constructed detailed **miniature** sets, like a New York City street, to provide the **backdrop** for the animated models. Now it was time for O'Brien to use the **process** he invented: **stop-motion animation**. With stop-motion animation, the miniature models were photographed one frame at a time and put into different positions for each frame. When each frame of the **developed** film was **projected** in sequence, the models appeared to move with the **illusion** of being alive.



1933: John Cerisoli's models of a giant ape and a dinosaur battle it out in a scene from the classic monster movie *King Kong*.

Award-winning special effects

The following movies won the Academy of Motion Picture Arts and Sciences award for Visual Effects. Have you see any of these movies?

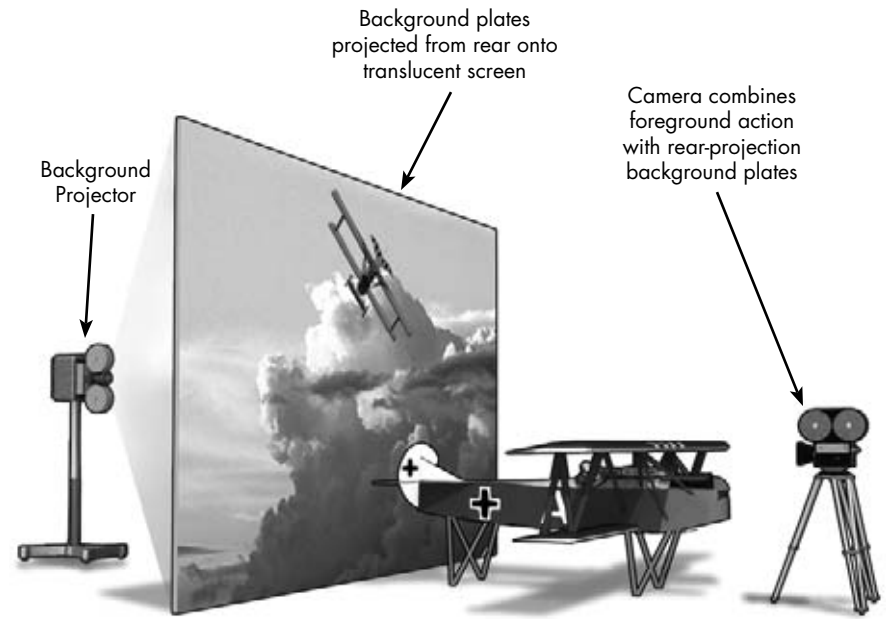
1995	Babe
1996	Independence Day —→
1997	Titanic
1998	What Dreams May Come
1999	The Matrix
2000	Gladiator
2001	The Lord of the Rings: The Fellowship of the Ring
2002	The Lord of the Rings: The Two Towers
2003	The Lord of the Rings: The Return of the King
2004	Spider-Man 2
2005	King Kong



Special effects have been used in movies for more than 100 years. George Melies, a French magician, invented some of the earliest special effects. In 1899 he directed a movie called *The Conjurer* and used special effects to make himself disappear. Some members of his audience were so terrified by what they saw that they actually fainted! Since then, many types of special effects tricks have been created.

Rear Projection

Rear projection is a type of special effect that creates fake **scenery** behind an actor. For example: to make it look like a person is driving a car on a beach, the beach scene is filmed first. Then the beach scene is projected onto a screen. A car and a driver are placed in front of the screen and filmed.





These actors were filmed in front of a green screen, and the backdrop with boats chasing them was added later.

Color Replacement Photography

With **color replacement photography**, the movement of an actor or an animal, such as someone falling, is filmed in front of a chroma blue screen or a green screen. The background is shot at a different time. Then the action of an actor pretending to fall is layered on top of the colored screen. The color is then erased and the background becomes visible wherever the color was. This special effect is like cutting out the shape of an animal or an actor from a sheet of paper and pasting it onto different scenery, except the image is moving and so is the scenery!

This technique is used every day on most weather portions of the news on TV. The weather anchor stands in front of a blue screen while a technician puts the image of a map behind the anchor. The image brought into the picture shows up on any area that is blue. You will never see a weather anchor on TV dressed in blue, as you might see a weather map where their body should be!



The weather anchor as she appears on television.



A weather anchor as she appears in the studio.



An example of a mechanical shark model

Animatronics

The huge shark crunching Richard Dreyfuss's boat in *Jaws* or the endearing creepiness of *ET* are unforgettable images. The process known as **animatronics** was used to create *ET* as well as the shark in *Jaws*. Animatronics is a type of special effect that creates characters using electronic robots. A special effects crew controls the robots' movements through remote control.

Animators study the movements of real animals and people and try to copy the movements electronically. Because animatronic creatures appear to move like living creatures, they can be filmed interacting with the actors and real animals. The dinosaurs in *Jurassic Park* were just as scary as *ET* was endearing, due in large part to the capabilities of animatronics.



An example of a mechanical dinosaur model



Miniature models of King Kong and Fay Wray in the classic 1933 movie.

Miniature Models

Rather than filming a real building, or other object, miniature models are often used as special effects. On film, the models look life-size.

Sets and **props** can be made extra large or small to make people seem tiny, or large. Sets include such things as houses, cities, or jungles—anywhere the acting takes place. Props are objects like chairs or swords that actors use.

Weather Special Effects

Special effects are often used in movies to create weather conditions and natural disasters. For example, to film a violent storm at sea, actors do not need to go out in a real storm—that would be very dangerous. Instead, they can sit safely in a boat in a large pool or pond. A machine creates crashing waves in the water, huge fans produce powerful winds, and giant overhead sprinklers send down pouring rain.



This shot from the film *The Perfect Storm* was computer generated, but most of the movie was shot in a large pool in front of a green screen.

The scene is filmed in front of a blue screen, which can later be replaced with film of an actual storm. When snowstorms are needed in a movie, snowflakes can be made from bleached potato flakes, plastic flakes, or powdered laundry detergent.



The train in the CGI animated film *The Polar Express* (2004).

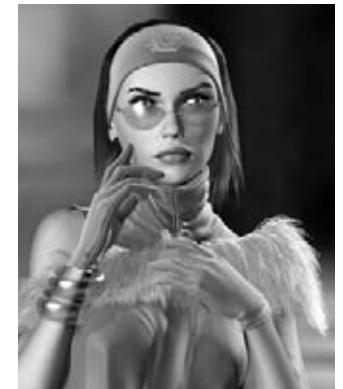
Computer-Generated Images (CGI)

Computer-generated images can be used to create almost any **imaginable** effect in a movie—blazing fires, giant waves, or talking dinosaurs. Once the images are created on the computer, they can be changed, moved, copied, and combined with other images for the movie. Computers helped revolutionize the world of special effects in movies. With computers, special effects artists can create movie scenes never thought possible. Now, computer-generated images can actually be used to create an entire movie like *The Polar Express*.

Conclusion

Audiences 70 years ago were awestruck by the special effects used in *King Kong*. And audiences of today are equally awestruck as they watch volcanoes erupt in cities, spaceships engage in dogfights, and huge ocean liners crack in half and sink to the bottom of the ocean. But today's audiences know a little more about special effects than audiences of years ago. Does this mean that today's audiences are bored with today's movies? Not a chance! They still enjoy the "magic" they see on the screen. They love being frightened, amazed, and entertained.

So, what's left for movie special effects? Computer special effects artists want to perfect a way to make a computer-generated human being look completely real. Will they achieve their goal? They probably will, because with special effects anything can happen, right?



CGI-rendered human character

Glossary

animatronics	the electronics that makes models of creatures move as if they were alive (p. 13)
backdrop	the scenery behind characters during a certain part of the movie (p. 8)
color replacement photography	photography erasing a color from the front picture so that a background picture shows through (p. 11)
computer-generated images	images made by using a computer (p. 17)
developed	processed to be useable (p. 8)
illusion	something false that tricks you into thinking that it is real or really happened (p. 8)
imaginable	able to be seen in your mind (p. 17)
miniature	very small (p. 8)
models	objects made-up to look like the real things they resemble (p. 7)

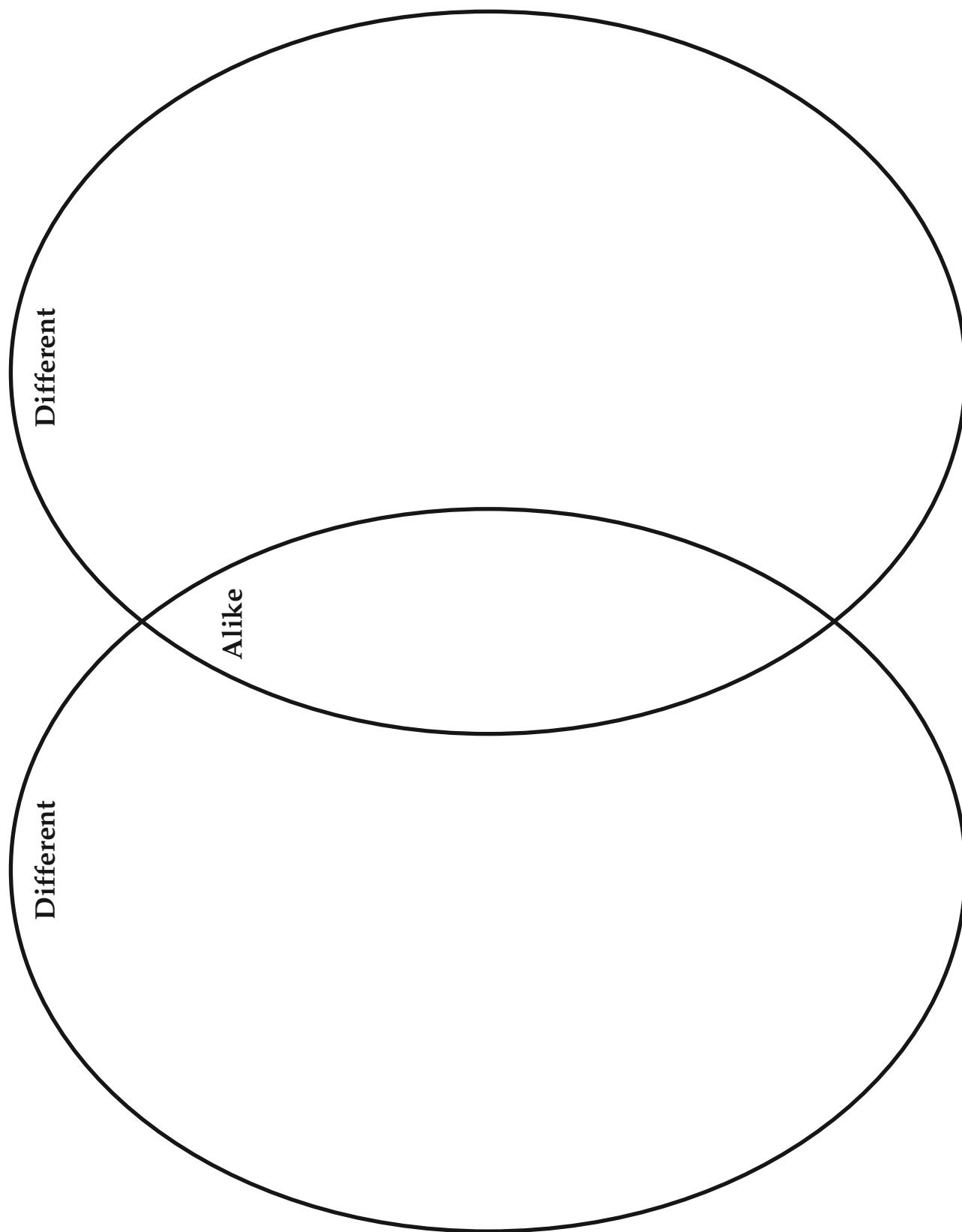
movements	the way that something moves in doing certain actions (p. 7)
process	the order of work done to complete a project (p. 8)
projected	to be shown on a theater or television screen (p. 8)
props	movable objects used on the set of a play or movie (p. 15)
rear projection	a special effect that adds a background scene behind an actor in a studio (p. 10)
scenery	the painted walls or objects that make up the set of a play or movie (p. 10)
special effects	illusions created for movies or television using computers, cameras, or props (p. 5)
stop-motion animation	taking a few photos of a model each time it is moved slightly so that it looks like the model is moving on its own (p. 8)

Name _____

Instructions: Write in the two topics you are comparing. Write details that tell how the topics are different in the outer circles. Write details that tell how the topics are alike where the circles overlap.

Topic: _____

Topic: _____



Name _____

Instructions: Read the sentences below and add commas to separate the words or phrases in a list. Then create two sentences that use commas in a series and write them on the lines provided.

1. The ape gently puts the woman inside the building thumps his chest and roars menacingly.
2. Special effects allow a superhero to rescue anyone anywhere at any time.
3. Special effects can make buildings crumble tornadoes twist and dinosaurs come alive.
4. Sets include such things as houses cities or jungles.
5. A machine creates crashing waves in the water huge fans produce powerful winds and giant overhead sprinklers send down pouring rain.
6. Computer-generated images can be used to create blazing fires giant waves or talking dinosaurs.



1. _____

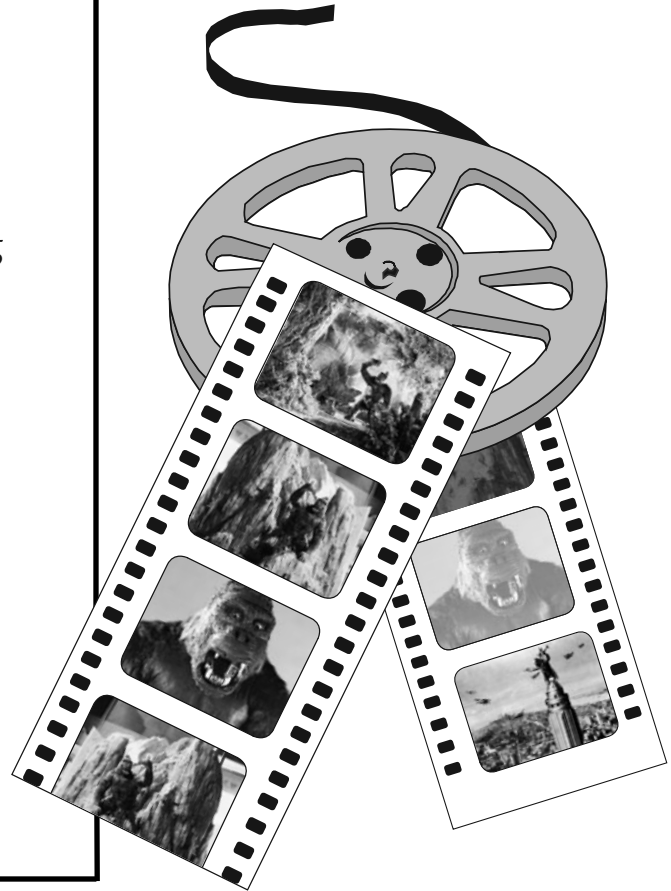
2. _____

Name _____

Instructions: Match words in the left-hand column with words in the right-hand column to create compound words found in *Special Effects*. Then write the compound words you created on the lines at the bottom of the page.

out
movie
super
any
space
back
photo
some
over
snow
dog
ocean

one
fights
storms
head
making
one
side
craft
liners
drop
hero
graph



Titanic Treasure

A Reading A-Z Level T Leveled Reader

Word Count: 1,073




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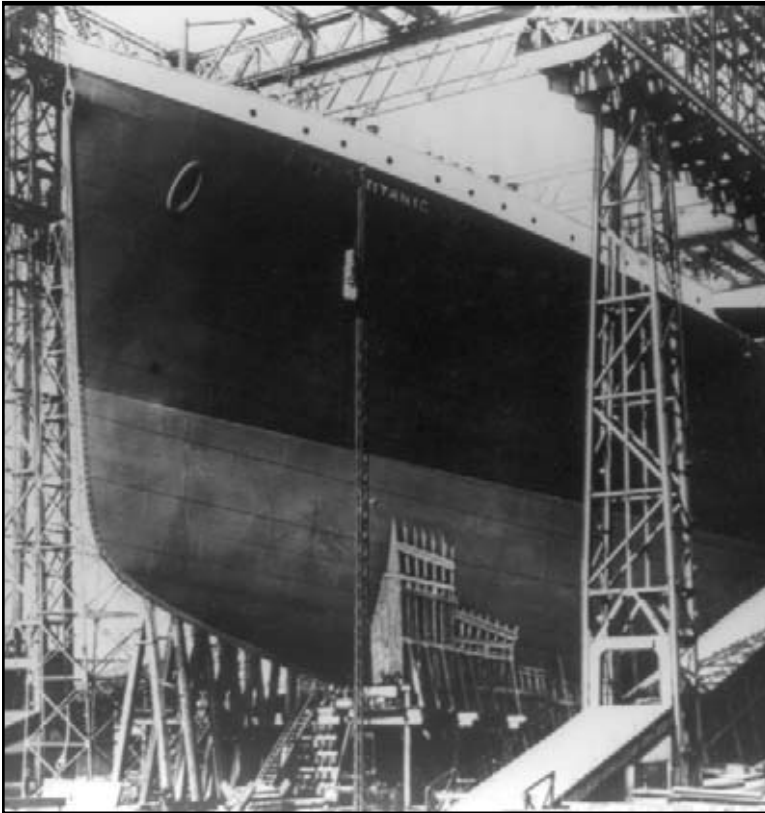
Titanic Treasure



Written by Jane Sellman

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***Titanic* Treasure**



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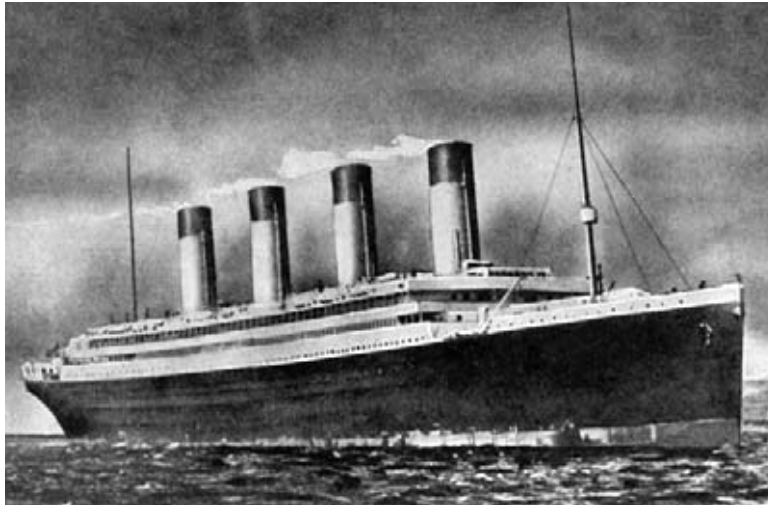
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Introduction

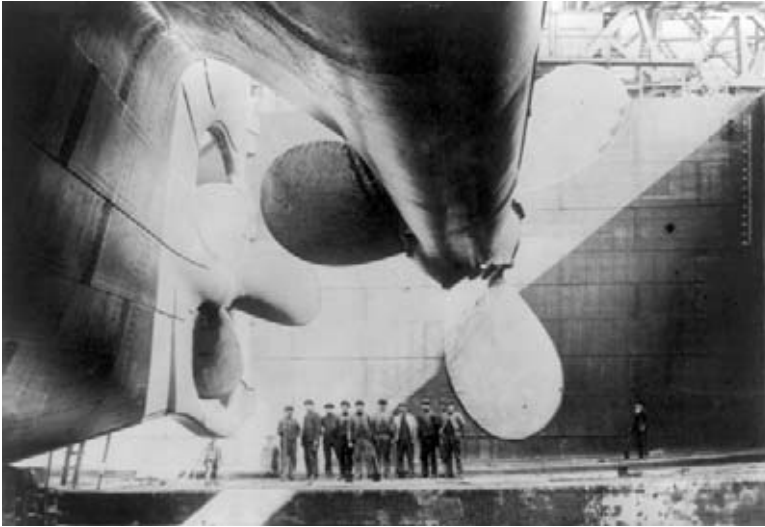
The sea was calm as a huge new ship bound for New York City, crossed the Atlantic Ocean. Suddenly, just before midnight, the crew and passengers felt a jarring thud as the ship struck an iceberg. Less than three hours later, the ship broke in two, disappeared under water, and sank to the bottom of the ocean. The *Titanic* was gone forever—or was it?

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A painting depicting the sinking of the *Titanic*

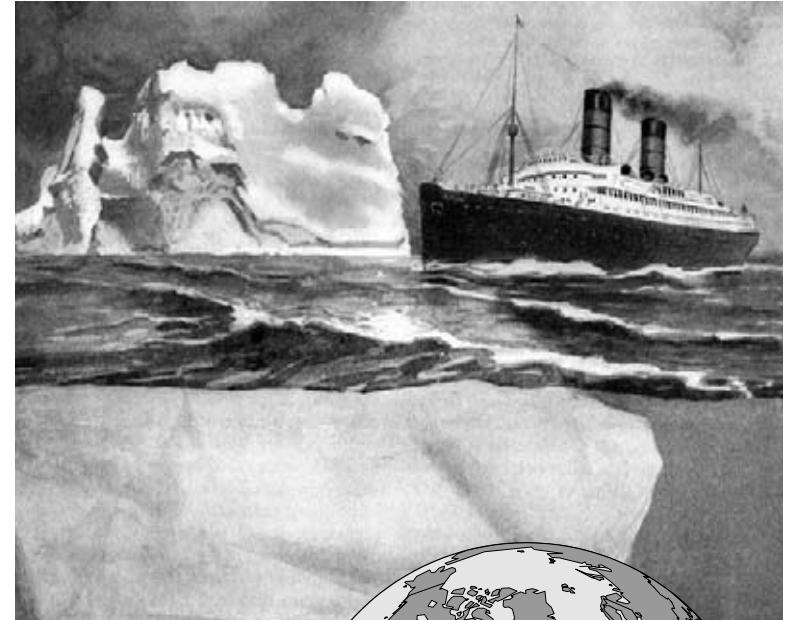


The size of the *Titanic* is clear in the comparison of the ship's propellers with the men in the background.

The Unsinkable Ship

The *Titanic* was built in 1911 to travel across the Atlantic Ocean. Back in the early 1900s, airplanes were not available for passenger travel. The only way to travel between Europe and the United States was by ship.

The *Titanic* was the largest passenger ship ever built. It rose twelve stories high, and the length from **bow** to **stern** equaled three football fields. The builders fitted the ship with watertight doors to prevent the ship from sinking.



Most of an iceberg's hazards lie beneath the surface (top); the fateful route of the *Titanic* (right).

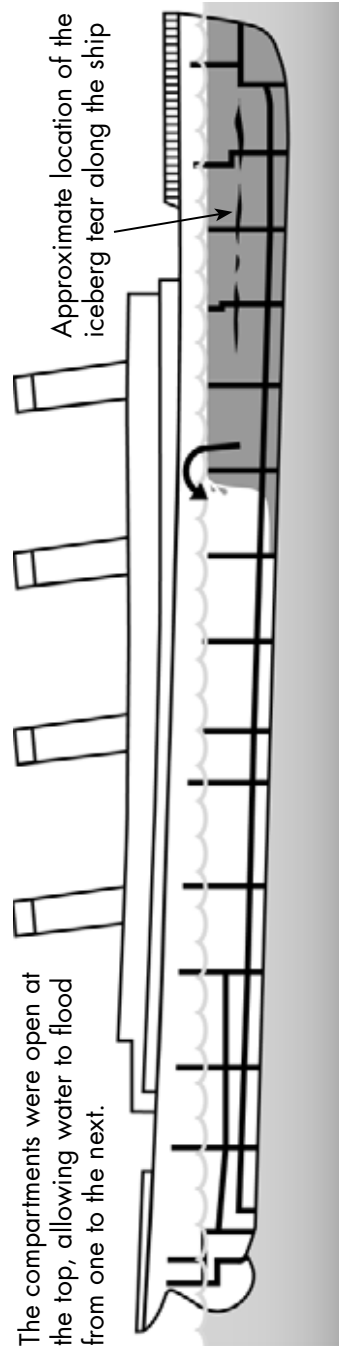


Tragedy Strikes

Many people wanted to travel on the ship's **maiden voyage**. The last passengers boarded the *Titanic* on April 10, 1912. The ship left Southampton, England, and sailed for New York City, United States, but it never arrived. On the night of April 14, the ship struck an iceberg. People were not worried because they had been told that the ship was unsinkable.

The side of the ship scraped an iceberg, causing seawater to pour in. With more than 2,200 people aboard, the *Titanic* started to sink. The ship did not carry enough lifeboats because people believed the ship was unsinkable. Women and children quickly filled the few lifeboats that were available. Many people in the lower decks could not reach the boats in time.

The *Titanic*'s bow was soon under water. Then, at 2:17 AM, the *Titanic* split in two. More water rushed in, and the two parts of the ship slipped under water and sank to the bottom of the ocean. About 1,500 people did not survive that night.



For many years, people discussed the **tragedy** and what may have caused the “unsinkable” *Titanic* to sink. Some people tried to locate the ship, hoping to find clues to help them understand what happened. But the water was too deep, too dark, and too cold. The mystery of the *Titanic* tragedy went unsolved.



Rough seas place crews at risk and thwart efforts to find out what happened to the *Titanic*.



Robert Ballard

Following Curiosity

As a boy, Robert Ballard was very curious about the ocean. He explored the beach in southern California, where he grew up. His parents and teachers encouraged his curiosity about the ocean. Robert spent hours fishing and exploring the sea life in **tidal pools**. Then he learned how to **snorkel** and to **scuba dive**.



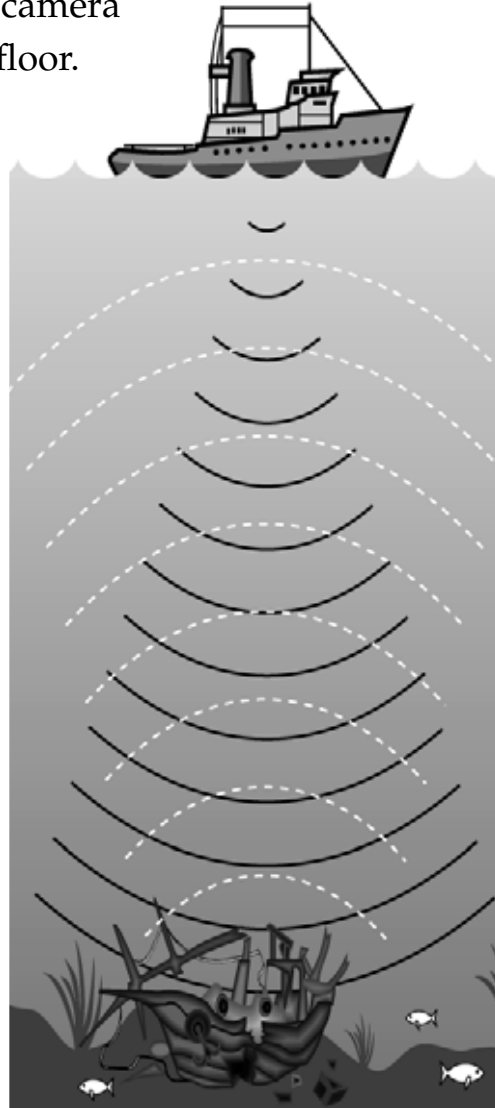
Robert Ballard, center, and fellow scientists

Robert followed his curiosity and studied many subjects to prepare for becoming an underwater explorer. He studied geology to learn about rocks and minerals, and he studied other sciences, too. In the U.S. Navy, he received more training. Robert went to work for Woods Hole Oceanographic Institution in Massachusetts and studied Earth's oceans. He became interested in shipwrecks and decided to find the *Titanic*.

By 1985, advancements in technology allowed for more **remote** ocean exploration. So Robert and his fellow scientists went to the area where the *Titanic* had sunk. They first used a small video camera to study the ocean floor.

Robert and his co-workers also used sonar, which enables people to locate distant things using sound waves. One day, **sonar** showed marks on the ocean floor. Soon the group discovered pieces of a ship and a **hull**—which is the main part of a ship.

Through sonar, a ship can explore the depths of the oceans.



Comparing photos like this one to old photos of the *Titanic* let Robert's team know they had found the right ship.

By comparing what they saw with old photographs, the team members knew they had found the *Titanic*. At first they were so excited that they yelled and clapped. Although, later, they felt sad. They held a memorial service for the ship's passengers who did not survive.

Robert and his co-workers began to videotape the ship and study the tapes. However, winter was coming, and Robert's curiosity would have to wait. The sea had become too rough and dangerous for the exploration to continue.

A Closer Look

In 1986, Robert and his team returned better prepared. They now had *Alvin*, a **submersible** that allowed the person inside it to get into tight places underwater and move quickly. Robert also brought *Jason Junior* which allowed a person above the surface of the water to control it. Robert's team used *Alvin* to view the decks and rooms of the ship's wreckage. They recorded more video, and *Jason Junior* also took pictures.



The
submersible
Jason Junior

The explorers were amazed and saddened by what they found. The bow and stern of the *Titanic* were 1,900 feet (579 m) from each other. Between the two pieces of the ship was a **debris field**. The team saw shoes, a safe, a bathtub, and even part of a doll.



Titanic's debris field

Robert and his team also saw that the iceberg had struck the ship's hull, causing the damage that allowed water to rush in. The weight of the water caused the ship to sink.



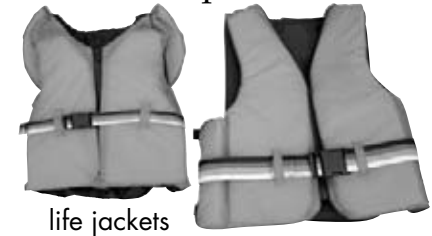
A mechanical arm sifts through shipwreck debris

Robert tried to protect the *Titanic* from treasure hunters. He did not want anyone to take the things that belonged to the ship or its passengers. But in the following year, **salvagers** took away thousands of items from the ship. Some of the items were placed in an exhibit.

Robert Ballard is still protecting the *Titanic*. Every time someone explores the shipwreck, the remains are damaged more. Robert's goal is to get governments to sign a treaty, or agreement, saying that no one may take anything from the ship. Robert believes the *Titanic* should be respected as a memorial to those who died aboard it. The United Kingdom and the United States have both signed this treaty.

Lessons from the Tragedy

After the *Titanic* tragedy, shipbuilders no longer believed a ship could truly be unsinkable. Crews became better trained to take care of passengers in emergency situations. People learned the importance of putting enough life jackets and lifeboats on each ship for all passengers.



life jackets

The *Titanic* also taught people about the incredible power of the ocean. Scientists have



discovered that the shipwreck's metal is being eaten away by tiny bits of rust. Tourists and divers have also added to the ship's problems, littering it with everything from artificial flowers to soda bottles.

Lifeboats on a modern cruise ship



A doctor's bag collected from the *Titanic's* wreckage

Protecting the *Titanic* is a way to protect history. The original **artifacts** on the ship tell a story that needs to be heard as it really happened. Every time people remove something from the *Titanic* or add something to its remains, they change history. Whenever this happens, it becomes harder to tell what happened to those 2,200 passengers nearly one hundred years ago.

A *Titanic* Survivor

Millvina Dean was nine weeks old when she was carried aboard the *Titanic*. Along with her parents and brother, she was going to the United States. Her father hoped to open a tobacco shop there.

Millvina and her mother and brother survived the sinking of the *Titanic*. Aboard their rescue ship, baby Millvina became a celebrity. Everyone wanted to hold the littlest survivor and take her picture.

The Dean family returned to England. During World War II, Millvina helped her country by drawing maps for the government. She became a celebrity again in her 70s and often attended *Titanic* conventions.



Glossary

artifacts	discovered objects made or used by humans (p. 17)
bow	the front of a ship (p. 5)
debris field	an area in which items from a wreck are located (p. 14)
hull	the outer body or shell of a ship (p. 11)
maiden voyage	the first voyage of a ship (p. 6)
remote	distant or hard to reach (p. 11)
salvagers	people who recover parts of a ship after a shipwreck (p. 15)
scuba dive	to stay under water for long periods of time by using special breathing equipment (p. 9)
snorkel	to swim using a short, curved tube that allows the swimmer to breathe while under water (p. 9)
sonar	a device that sends high-frequency sound waves through water and records their reflection back to the system (p. 11)

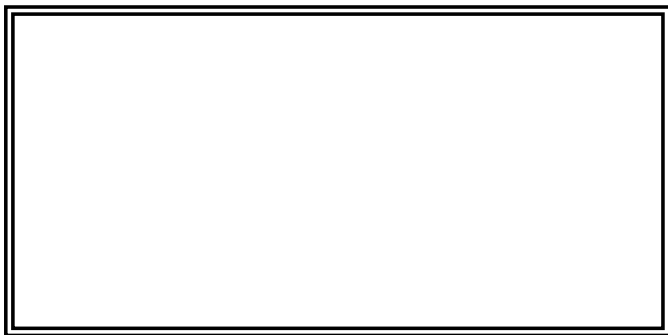
stern	the back of a ship (p. 5)
submersible	a small vessel designed to be operated while completely under water (p. 13)
tidal pools	pools of water that remain on a coastline after the tide becomes lower; tidal pools often contain many living things (p. 9)
tragedy	an event that causes great destruction, suffering, or loss of life (p. 8)

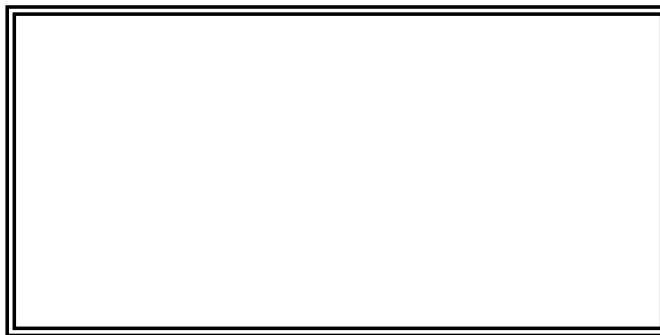
Index

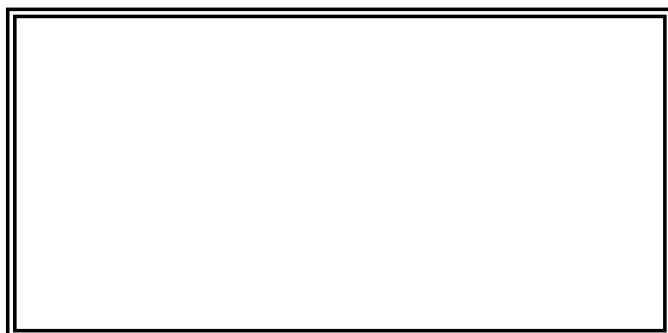
Ballard, Robert, 9-15	survivors, 7, 18
Dean, Millvina, 18	Titanic,
Europe, 5, 6, 15, 18	bow, 5, 7, 12, 14
iceberg, 4, 6-7, 14	decks, 7, 13
lifeboat, 7, 16	hull, 11, 14
passengers, 4-7, 15-17	propeller, 5
sonar, 11	stern, 5, 14
submersibles, 13	

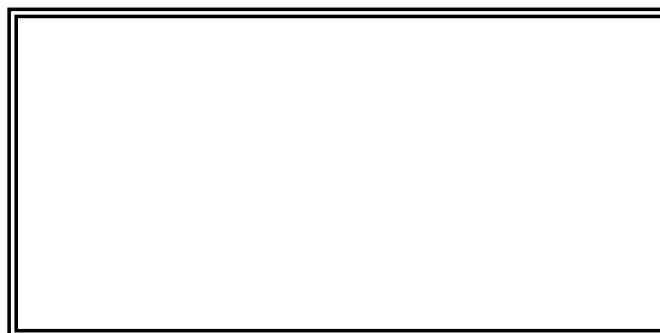
Name _____

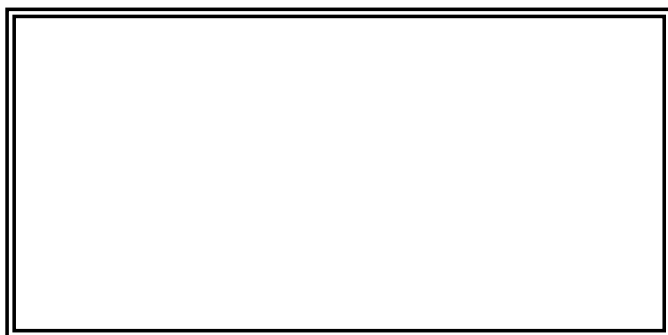
Instructions: Draw pictures to represent parts in the story where you stopped to visualize in order to understand what you had just read. Write a description below each picture to explain your drawing.

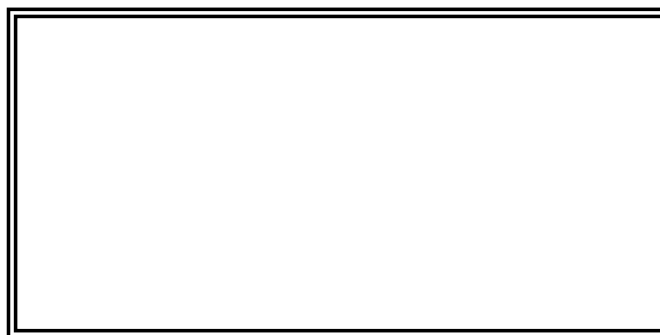












Name _____

Instructions: Write cause-and-effect relationships in the correct boxes below.

Cause



Effect

TITANIC TREASURE • LEVEL T • 2

Cause



Effect

Cause



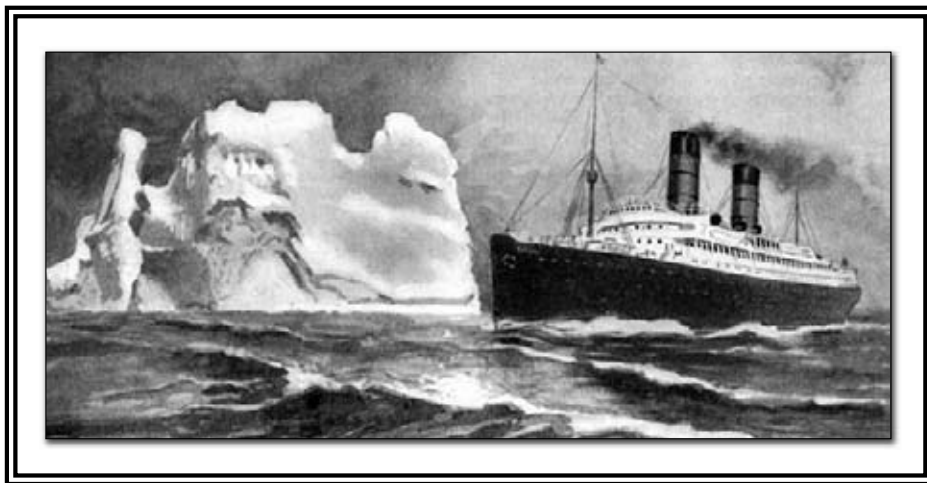
Effect

SKILL: CAUSE AND EFFECT

Name _____

Instructions: Read each sentence. Add serial commas to separate items listed in each sentence.

1. The *Titanic* was the biggest fanciest most elaborate ship ever built.
2. The Atlantic Ocean was deep dark and cold that night.
3. The *Titanic* hit an iceberg filled up with water and sank to the bottom of the ocean.
4. There were not enough lifeboats for all the men women and children.
5. Robert Ballard studied geology oceanography and technology.
6. When winter came, the sea became too rough cold and dangerous to explore.
7. The explorers saw shoes a safe a bathtub and even part of a doll.
8. Millvina Dean her mother and brother all survived the sinking of the *Titanic*.



Name _____

Instructions: Match each number with the correct word equivalent. Then read and write the numbers below.

14	nineteen hundreds
May 11	five-eighteen p.m.
5:18 p.m.	fourteen
2,400	May eleventh
1900s	two thousand four hundred

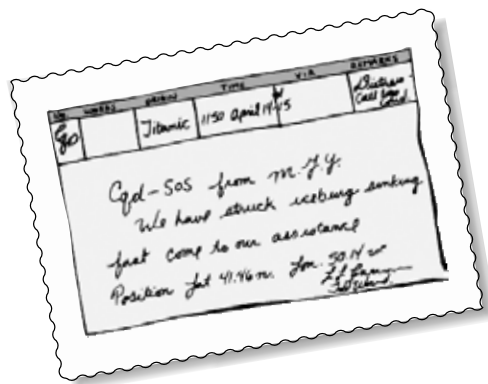
four hundred fifty-six: _____

June twenty-third, two thousand four: _____

three twenty-five p.m.: _____

eighteen hundreds: _____

six thousand, five hundred thirty-five: _____



Weave It!

A Reading A-Z Level T Leveled Reader

Word Count: 1,247

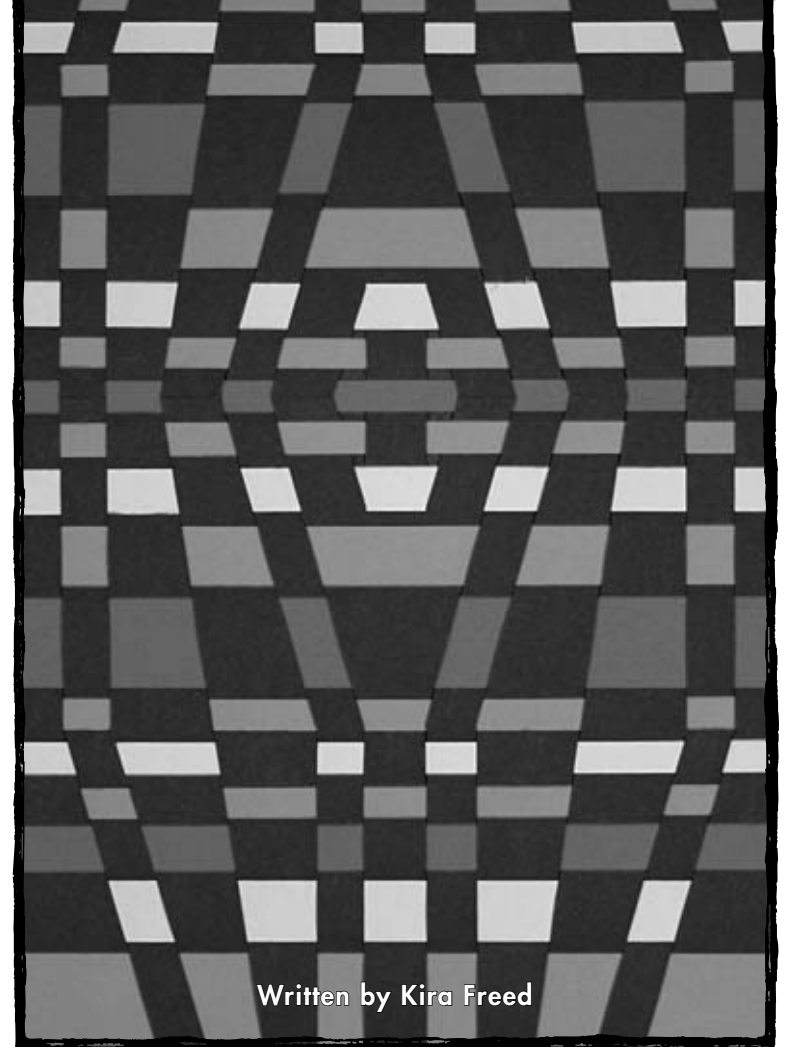



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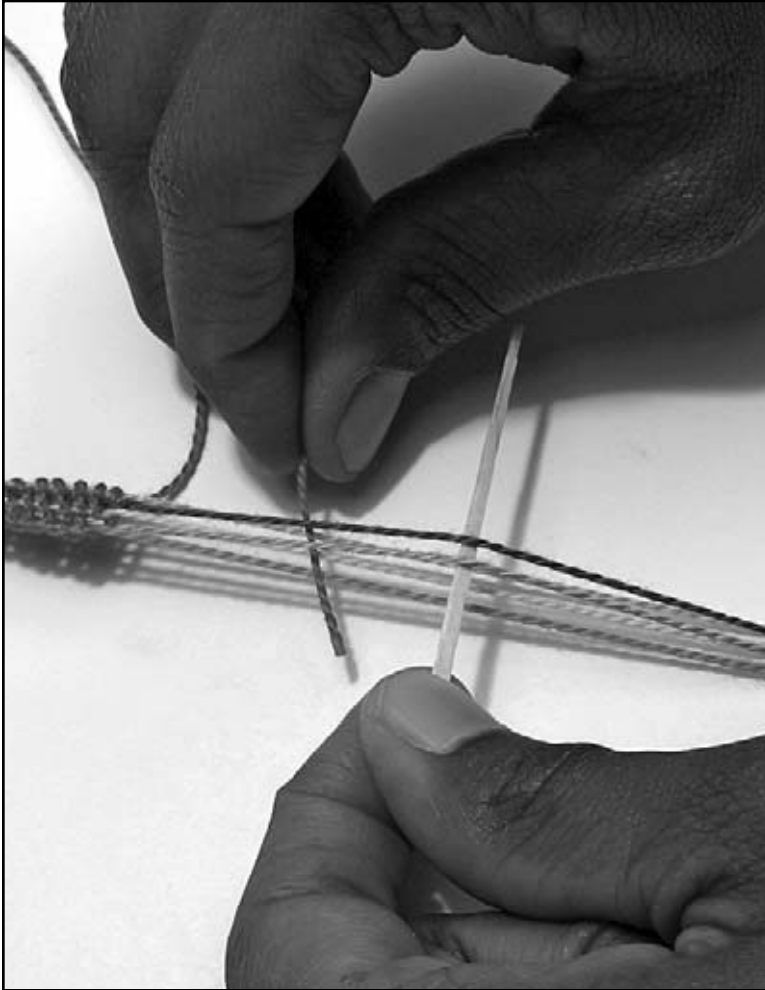
Weave It!



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Correlation

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Fountas & Pinnell	P
Reading Recovery	23
DRA	38

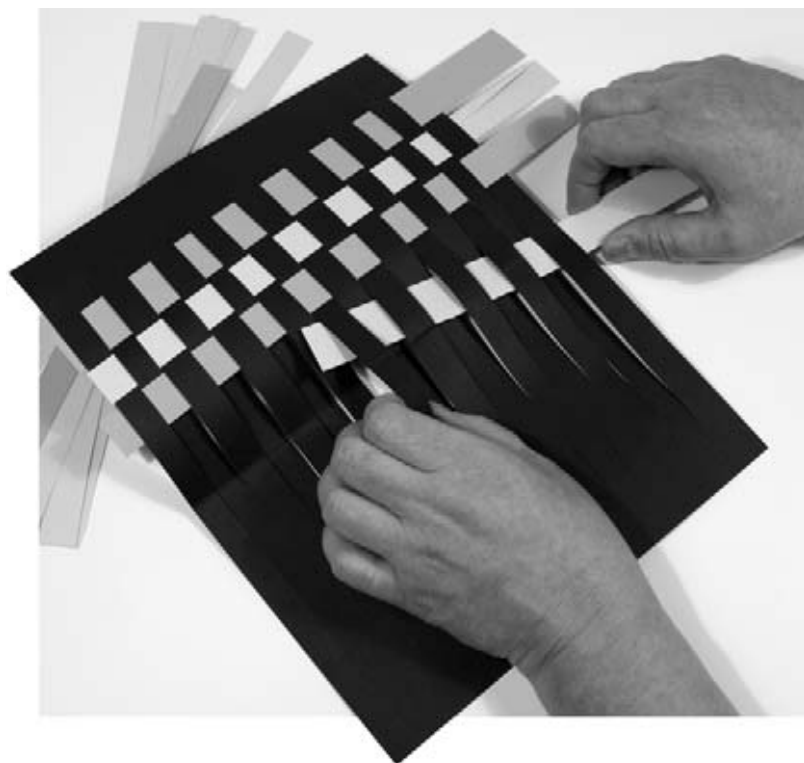


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What Is Weaving?



Weaving with natural materials

Weaving is the process of creating fabric by lacing together two sets of threads or fibers. The art and practical craft of weaving dates back

tens of thousands of years. In ancient times people wore shirts, skirts, and hats made of grasses that had been woven together.

Before beginning a new woven pattern, the weaver needs two sets of threads as a base. The **warp** is a set of **vertical** threads that are held in position, usually over a frame, by tension. The **weft** is one or more **horizontal** threads. The weaver laces the weft over and under the warp and packs it down so the threads fit closely together and form a fabric.

This book introduces you to the art of weaving with three fun projects—a paper mat, a friendship bracelet, and a dreamcatcher. Each project will introduce you to a different way to weave. Let's begin!

Materials:

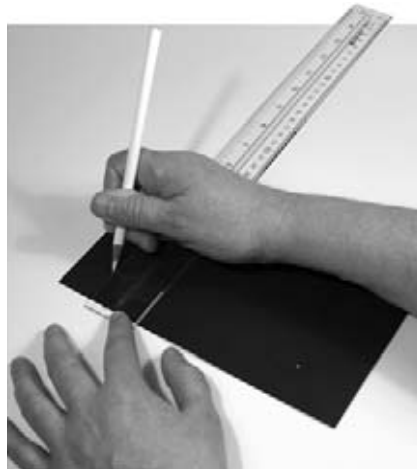
- 9" x 12" construction paper (One whole piece, a second piece cut into 1" x 9" strips)
- Pencil
- Ruler
- Scissors
- Glue stick



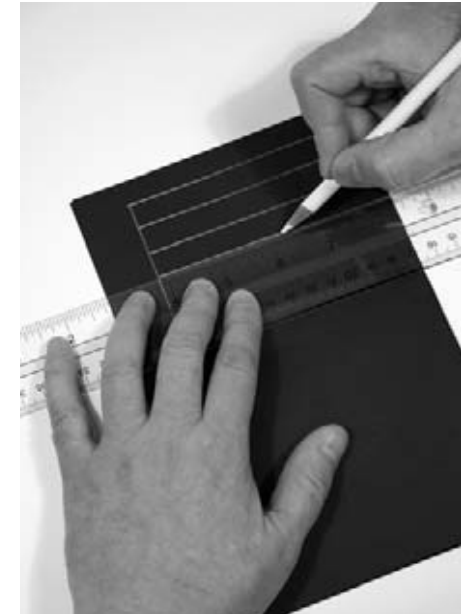
Paper Mat Weaving

Our first project introduces the basics of weaving with a paper-weaving activity. You can use paper weaving to make placemats, book covers, and colorful designs to hang on a wall.

- ❶ Select one piece of paper, which will be the warp, or foundation, of your project. Carefully fold it in half and draw a straight line 1" from the long open edge.



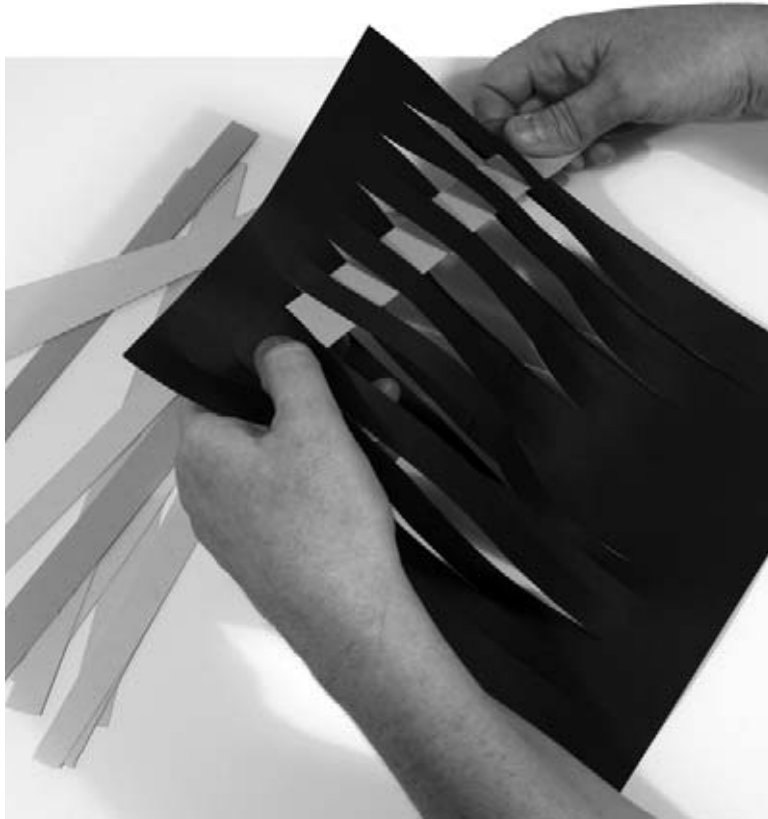
- ❷ Draw ten to twelve lines from the fold to the straight line you just drew. You may make these lines straight, curved, or a mixture. Be careful to avoid drawing lines too close to the edges of the paper. Also, avoid drawing **complicated** shapes, as this will make weaving too hard.



- ❸ Keeping the paper folded, cut along the lines you drew in step 2. Start at the fold in the paper and stop at the straight line. *Do not cut on the straight line.* Gently unfold your paper and place it flat on the table with the cuts placed vertically.



④ Pick up a 1" x 9" strip of a different color of paper, which is the weft. Insert the strip crosswise over one warp and under the next one. If you're right-handed, start on the right side, and if you're left-handed, start on the left side. Continue weaving over one strip and under the next strip until you reach the far edge. Gently slide this weft strip all the way to the top edge of the warp, stopping at the horizontal line.



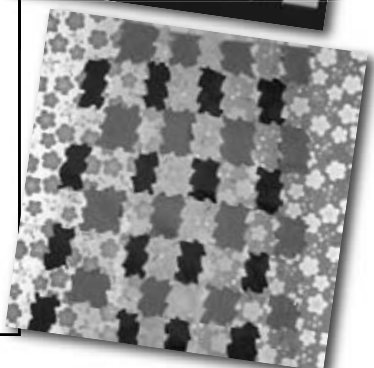
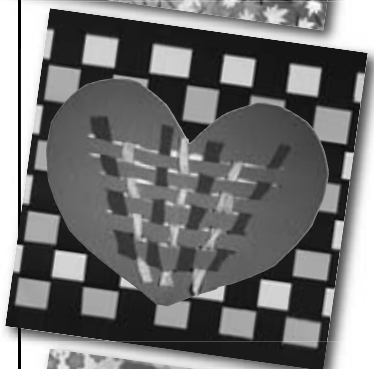
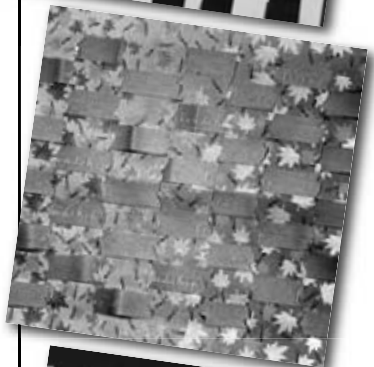
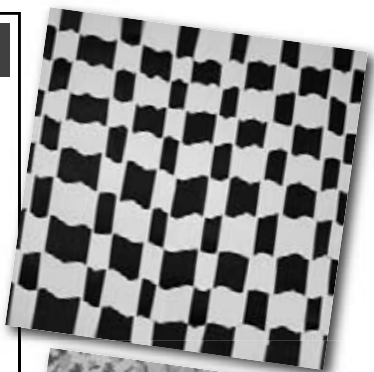
⑤ Start weaving a new row with another 1" x 9" strip of paper. Since the **previous** row began with *over one*, start this row with *under one*. Continue weaving weft strips, **alternating** how you start the rows (*over one* and then *under one*). Gently slide each weft strip up right next to the previous one. Be especially gentle as you insert the last strip to avoid tearing the paper.



⑥ After your weaving is finished, use a glue stick to attach the loose edges of the weft strips. Turn over your weaving and glue these edges, too. Congratulations—you've just finished your first weaving!

Variations

- Try different thicknesses of warps and wefts to create new patterns.
- Try other kinds of paper, such as wrapping paper or origami paper. Be careful when you handle thin paper to avoid tearing.
- Cut the weft in curves instead of straight lines. Be sure to insert the weft strips in the same order as how you cut them so they will interlock.
- Using a different color of paper, cut out a shape, such as a heart or a butterfly, from the center. Cut the weft and warp to highlight the shape you cut out.
- Paint or draw a picture on a piece of paper, and use it as the warp for a paper-weaving creation.



Materials:

- Embroidery floss of various colors
- Round toothpicks
- Masking tape
- Small beads, if desired

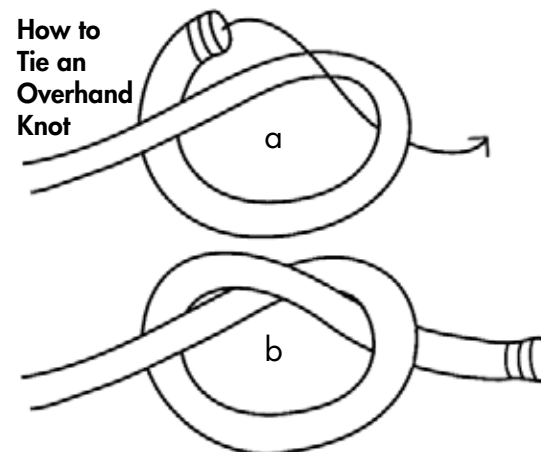


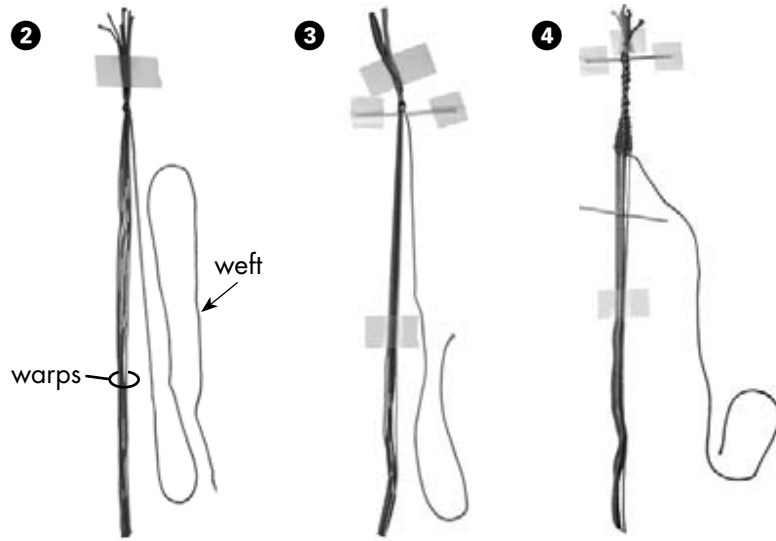
Weaving a Friendship Bracelet

Our next project uses your paper-weaving skills to work with thread. You can make friendship bracelets with this finger-weaving technique and also use it in dreamcatchers.

- 1 Cut four to six warp threads of embroidery floss, each thread 1' long, as well as one weft thread 4' in length. Line up one end of all the threads even with each other, and tie an overhand knot 3" from the end.

How to Tie an Overhand Knot



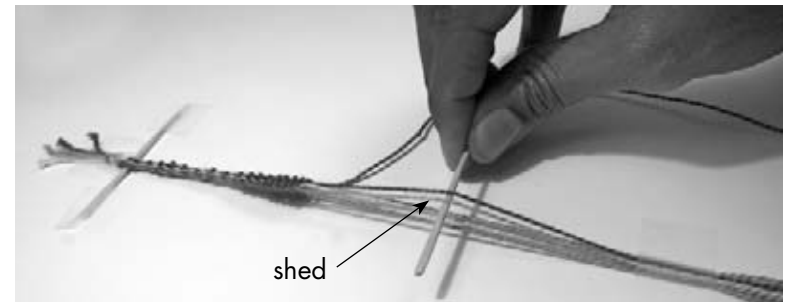


② Tape the “tails” of the knotted end to your work table a few inches from the table edge closest to you.

③ Separate the weft thread (the long one) from the warp threads. Then decide on the order you want for your warp threads. Smooth them out flat and tape them in that order near the edge of the table.

④ Insert a toothpick crosswise just under the knot—over one warp thread and under the next one. Continue weaving the toothpick over one and under one until you get to the other side. This toothpick will remain in place until you finish your weaving. Tape both ends to the table.

⑤ Use another toothpick to lift up every other warp thread. Lift up the *opposite* threads from the ones you lifted with the first toothpick. After you weave the toothpick through, lift it up enough to create a space, or **shed**, between the warp threads you lifted and the warp threads that are flat on the table.



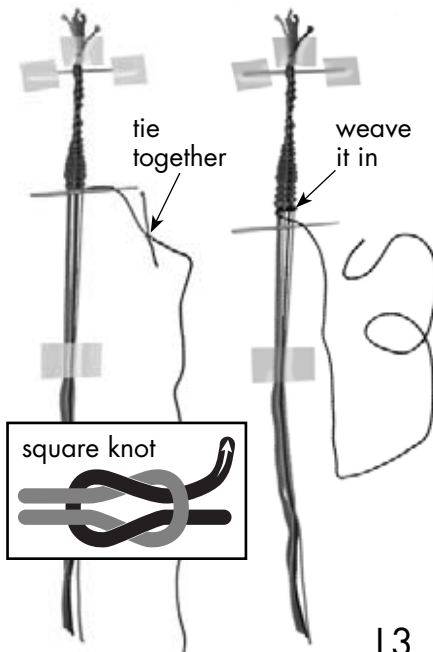
⑥ Feed the weft thread all the way through this space and gently pull it across. Slide the toothpick up and use it to pack the weft tightly against the top of the weaving.



⑦ Continue lifting up every other warp thread with the toothpick, feeding the weft thread through, and packing it tightly. You may need to move and retape your weaving several times as it grows. If the weft covers up the warp threads as you weave, tighten the warp threads and add more tape at the end closest to you.



⑧ If you get close to running out of weft thread, cut another piece and use a square knot to join the two. Do your best to position the knot in the middle of a row to hide it.

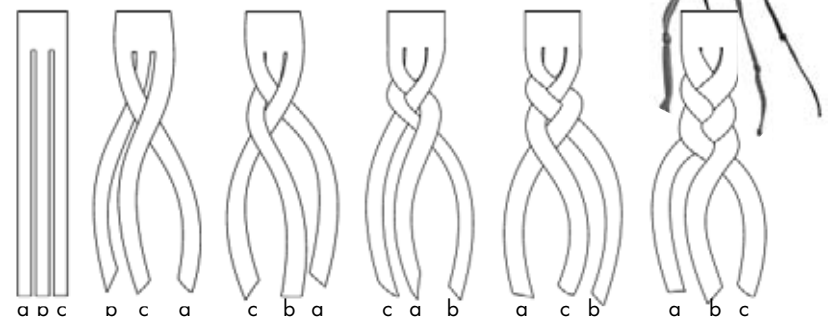


⑨ Stop when your weaving is as long as you want it to be. Remove the tape at the bottom and tie an overhand knot to secure the last row of weft. Cut the tails to 3" to match the other tails. Gently remove the tape from the top of your weaving and also remove the toothpick.



⑩ Finish the fringe with braiding or with an overhand knot on each piece of embroidery floss. You can also attach decorative beads if you like.

How to Braid

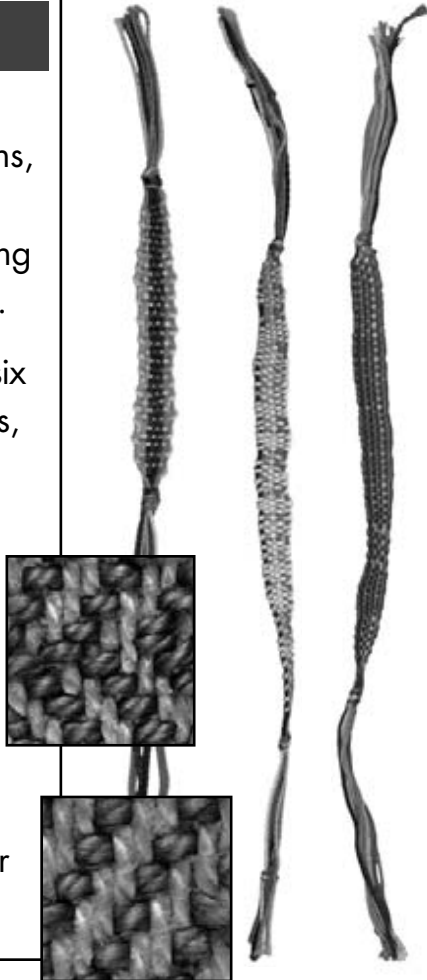


⑪ Use an overhand knot to tie your bracelet in place or to attach your weaving to something. Use the tails, not the woven area, to tie the overhand knot.



Variations

- Experiment with different color patterns, such as alternating warp colors or creating a stripe in the middle.
- If your weaving has six or more warp threads, you can try other weaving patterns. These two use *over two* and *under two*. Be sure to start with an even number of warp threads (*not* counting the one that becomes the weft) for these patterns.



Materials:

- Sturdy hoop
- Yarn and thread of various colors and textures
- Beads and shells with large holes, feathers, small bells, pompoms, and other decorative items

Dreamcatchers

Our third project combines finger weaving with other fiber techniques. Dreamcatchers are Native American objects traditionally hung over a bed or cradle. Legend has it that they catch bad dreams, which get burned up by the Sun the next day. Good dreams pass through dreamcatchers and allow for peaceful sleep.

❶ Wrap a wire or wooden hoop with yarn to use as the foundation of your dreamcatcher. Handle your creation gently as you work on it to avoid **distorting** the shape of the hoop.

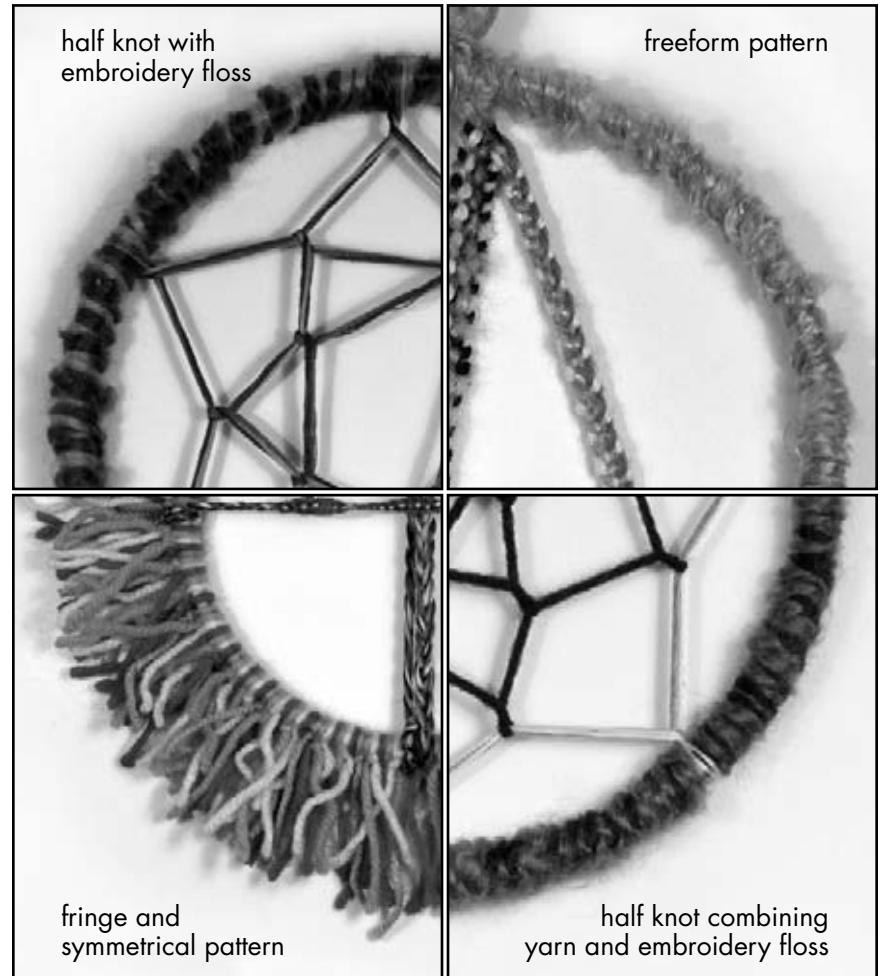


Helpful Hints:

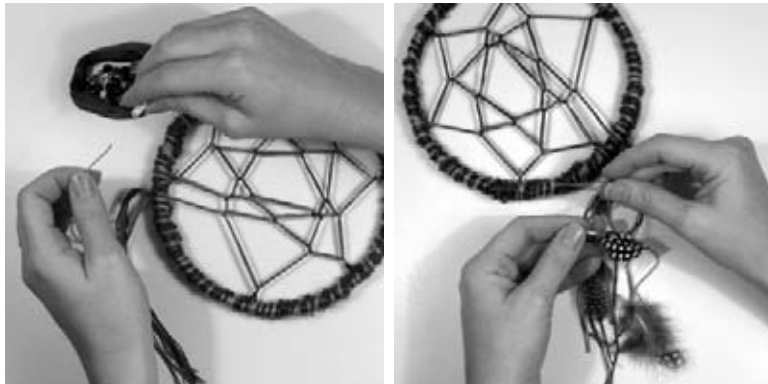
Cut about 6' of yarn to wrap a 12" hoop. Tie the yarn to the hoop with an overhand knot. Hide the tails by wrapping the yarn around them. Use two or more colors to wrap your hoop to add visual interest.

❷ Using yarn and the finger-weaving technique on page 10, create as many woven strips as you want. Attach them to your dreamcatcher with square knots.

❸ Add other pieces of yarn as desired using a combination of knotting and braiding. Use your imagination to create designs and different ways of attaching yarn. You can create **symmetrical** patterns, spider webs using half knots, **freeform** patterns, and more.



④ Attach beads, feathers, and other decorative items directly to the hoop or to fringe you tie to the hoop. Use a small drop of white glue if needed to hold things in place.

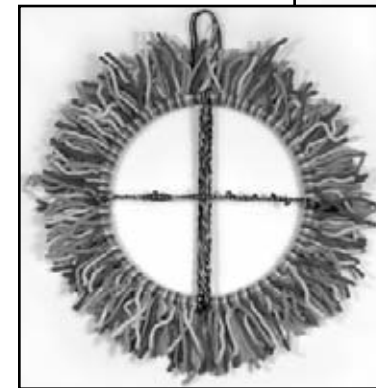
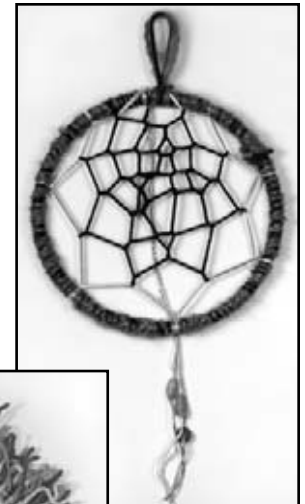


⑤ Create a loop with yarn or thread on the top of your dreamcatcher. Hang it above your bed and enjoy your dreams!



Variations

- To change your hoop's color, you can wrap it with yarn, paint it, or color it with markers.
- Use a small branch instead of a wire hoop as your foundation.
- Experiment with splitting your finger weaving into two or more branches partway across the hoop.



Conclusion

The projects in this book are just a taste of the many kinds of weaving you can do. You've learned the basic principles of weaving, and you've experimented by using your imagination. You've tried different materials, patterns, and colors. You can apply all of these ideas and techniques to many other kinds of weaving. Have fun!



Explore More

Books:

Weaving Around the World, by Kira Freed.
Reading A-Z (www.readinga-z.com), 2007.

Weaving Without a Loom, by Veronica
Burningham. Kent, Great Britain: Search Press,
1998.

You Can Weave! Projects for Young Weavers, by
Kathleen Monaghan and Hermon Joyner.
Worcester, Mass.: Davis Publications, 2000.

On the Web:

You can find instructions on the Internet for many weaving projects that do not require special equipment. Try typing *finger weaving* or *card weaving* into your favorite search engine.





Other Kinds of Weaving

hand loom
frame loom
backstrap loom
floor loom

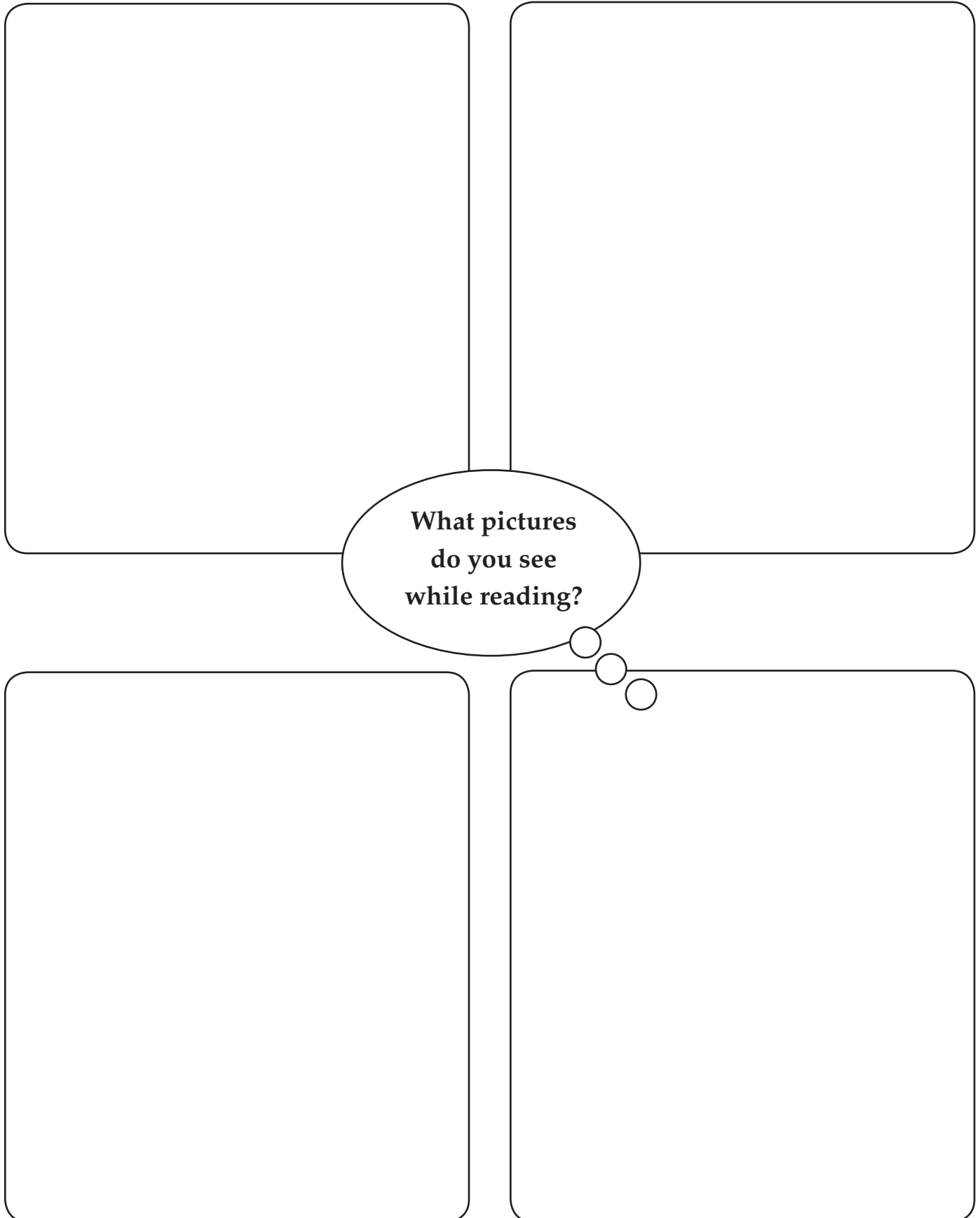


Glossary

alternating (<i>v.</i>)	occurring in turns; switching between (p. 8)
complicated (<i>adj.</i>)	complex; having many parts (p. 6)
distorting (<i>v.</i>)	twisting or pulling out of shape (p. 17)
freeform (<i>adj.</i>)	irregular; not having set rules (p. 18)
horizontal (<i>adj.</i>)	across; left to right (p. 4)
interlock (<i>v.</i>)	fit together (p. 9)
previous (<i>adj.</i>)	earlier; the one before (p. 8)
shed (<i>n.</i>)	the space between warp threads where weft threads pass through (p. 12)
symmetrical (<i>adj.</i>)	balanced like a mirror image (p. 18)
vertical (<i>adj.</i>)	up and down (p. 4)
warp (<i>n.</i>)	vertical threads that are the foundation of a woven piece (p. 4)
weft (<i>n.</i>)	horizontal threads interlaced between the warp of a woven piece (p. 4)

Name _____

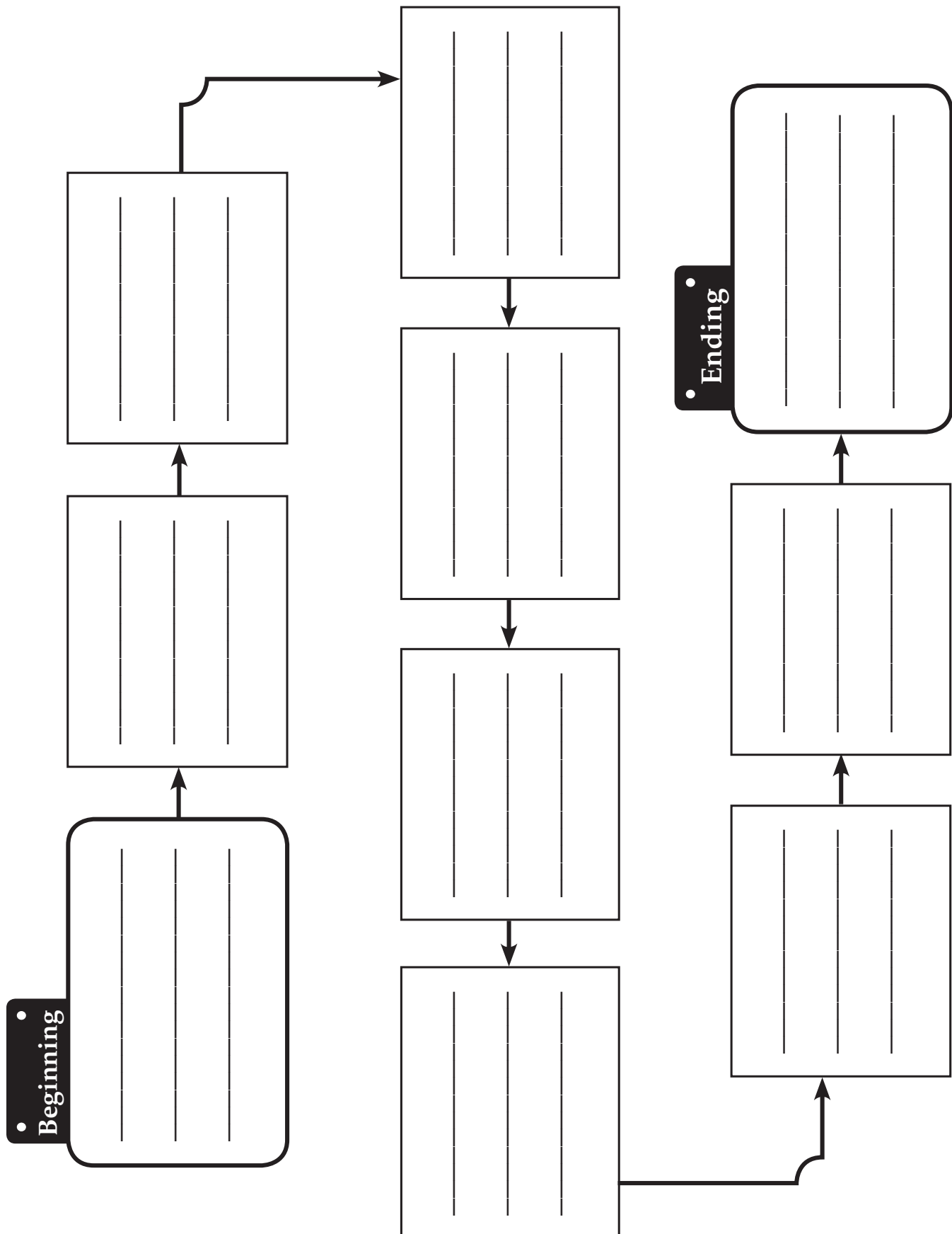
Instructions: Visualize information from each section of the text. Then draw what you pictured in the boxes.



What pictures
do you see
while reading?

Name _____

Instructions: Use this page to write what happened in sections 3 and 4 of the book in the order in which it happened. Teacher will need to make a copy of this page for each section.



Name _____

Instructions: Guess a word that you think means the same or almost the same as each word below, and write your answers in the *Guess* boxes. Then look up each word in the thesaurus and put a check mark in the *Thesaurus* box after you check your answer. Write the synonym that you think fits best in the *Synonym* box.

Word	Guess	Thesaurus	Synonym
creating			
beginning			
gently			
complicated			
finished			
continue			
previous			
opposite			
closest			
different			

Name _____

Instructions: Match words from the *left-hand* column with words from the *right-hand* column to create compound words found in Weave It! Then write the compound words you created on the lines at the bottom of the page.

friend

dream

paper-

free

right-

butter

out

left-

tooth

over

finger-

weft

spider

Native

warp

form

American

ship

thread

hand

side

hand

weaving

catcher

hand

web

thread

weaving

picks

fly

Deserts Dry

A Reading A-Z Level T Leveled Reader

Word Count: 1,226



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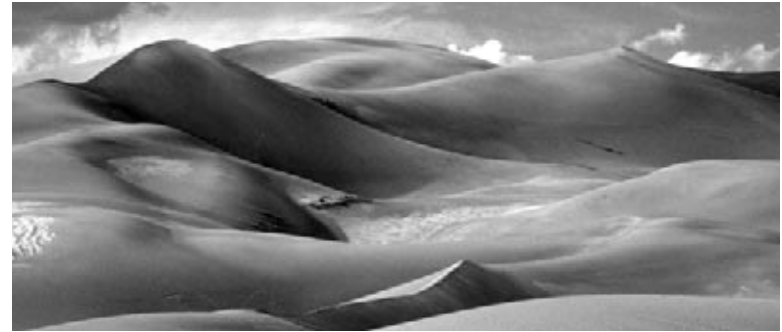
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Dunes are actually found in only a few deserts.

Introduction

Shut your eyes and imagine that you are standing in a desert. What kinds of things do you see around you? Camels, cactuses, and sand dunes? This is what most people think of when they imagine the desert. But deserts are far more rich and varied than the sandy landscape you might imagine.

A desert is any area where more water **evaporates**, or dries up, than falls as rain. Deserts can be hot, cool, or cold. In fact, both the North and South poles are considered deserts because all of the water there is frozen. Deserts make up almost one-third of the land on Earth, covering mountains, canyons, and glaciers. In this book, you will find out more about the surprising inhabitants of three amazing deserts: the Sahara, the Gobi, and the Atacama.

The Sahara

On many maps of Africa, the entire top third of the continent is colored yellow or pale beige. This color represents the vast, dry land of the Sahara Desert—by far the largest desert in the world. This is where we get many of our images of the desert. Great, ocean-like landscapes of yellow sand dunes cover one-fifth of the Sahara. The Tuareg people, in their blue, flowing robes and turbans, lead caravans of camels across the sandy desert to trade salt. But the Sahara is much more than sand.



Many people in the Sahara Desert still rely on camels.

It might surprise you to learn that the world's largest desert contains the world's longest river. The Nile flows along the eastern edge of the Sahara, bringing life-giving water to crops and cities along its banks. This river allowed the great civilization of ancient Egypt to survive among the dunes. In ancient Egypt, as today, people carved **irrigation**, or watering, channels to carry water



A pyramid built by ancient Egyptians

from the riverbed to thirsty crops, animals, and people. There is also water hidden deep underground in the Sahara. In some places, it seeps close to the surface, creating an **oasis**, or a small spot of green land.

But don't get the idea that the Sahara is moist and pleasant. In some areas, no rain falls for years, the temperature can get as high as 136°F (58°C), and powerful winds whip up sun-blocking dust storms. The Sahara is home to thorn trees, shrubs, and low-growing grasses. Several kinds of antelope survive here, as do many rodents, birds, and reptiles. One kind of reptile, a skink, is known as a sandfish because it can "swim" through the sand.



A man and his daughter in front of Saharan oil wells

People have lived in the Sahara for centuries. Northern Africa is a natural trading area for people from Africa, Europe, and Asia. Rich ancient cities survived on irrigated crops and the wealth of spices, fabrics, and precious metals and gems passing through. During the Middle Ages, northern Africa was a center of art, writing, science, and learning.

Today, a treasure lies hidden under the Sahara. The desert holds the world's largest reserves of oil, a liquid that many people depend on heavily for fuel and energy. Some countries of the Sahara have become incredibly wealthy from selling oil. Unfortunately, many nations have fought wars over this valuable **resource**.

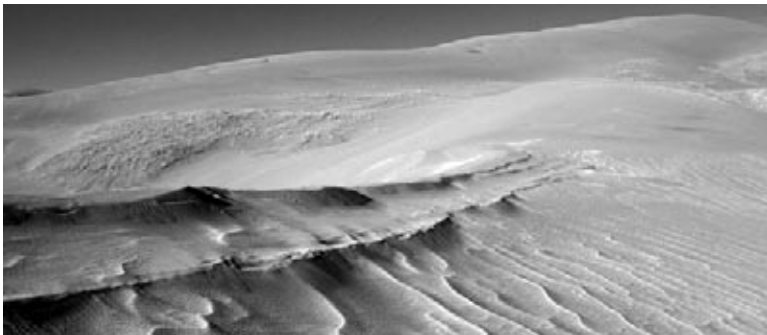


The Gobi is more remote than the Sahara.

The Gobi

Mongolia and northern China, which lie deep within the immense continent of Asia, are home to the high, dry Gobi Desert. It might surprise you that the Gobi is cold—it can get as low as -40°F (-40°C). Like the Sahara, the Gobi Desert was often crisscrossed by traders bringing goods to and from Asia. But unlike the Sahara, the Gobi is too harsh and remote to support cities.

Many parts of the Gobi are high, dry, and mountainous. The soil is rocky and salty, so there are few plants other than tough grasses and shrubs. But these grasses are enough to support grazing animals such as Mongolian horses, antelope, and gazelle. Also feeding on the grasses are many kinds of gerbils and another small rodent called the jerboa.



Whitish salt forms dunes in the Gobi.

Do You Know?

Normally, naturally occurring salt in the soil gets dissolved by rainwater and carried in rivers to the ocean. This is why the ocean is salty. But in the desert where there is little rain to dissolve the salt and the rivers dry up before reaching the ocean, salt is abundant in the soil. In some places, rivers carry salt into temporary marshes or lakes that dry in the desert air, leaving behind huge areas of white, crystallized salt. These areas are known as salt pans.



Mongolian herders finding water for their horses

Most of the people who inhabit the Gobi are **nomads**, people who move from place to place, often in search of food. Some of these nomads rely on horses for almost everything they need to live—meat, milk, hides for tents, and transportation. These nomads, who live in Mongolia, are excellent horse trainers who rope and race horses as well as any rodeo rider.

The Gobi has very few natural resources such as oil. But there is a fascinating sort of treasure here—fossils. The dry climate and lack of humans have preserved delicate fossils for millions of years. Today, scientists flock to the Gobi for new discoveries. It was here that the first dinosaur eggs were found, and where the fossil of a feathered reptile led scientists to believe that birds may be related to dinosaurs.



Archaeologists dig for fossils in the Gobi.



The Atacama is one of the highest deserts.

The Atacama

Just west of South America's Atacama Desert is the largest body of water in the world—the Pacific Ocean. The Atacama lies along the Pacific Coast, squeezed in a narrow band between the ocean and the high Andes Mountains. Temperatures in the Atacama are pleasant, between 50° and 70°F (10°–20°C). One would think that being near the ocean would give the Atacama some **moisture**, but this desert is possibly the driest place on Earth. In some places in the Atacama, it may have never rained in human memory.

Some moisture does visit the Atacama. In the spring, snow on the Andes melts and flows in rivers across the desert to the Pacific. But these rivers don't fill with water often, and they are usually steep, narrow, and quick-moving, so the water does not have a chance to spread out and sink in. The only other reliable form of moisture is fog that rolls in off the cold ocean. Many plants have developed ingenious ways to catch this fog. Some plant leaves gather droplets of fog and direct them toward their roots. Small "cloud forests" of these plants can grow in sheltered areas along the coasts where the fog is thick enough.



Llamas

Other than the cloud forests, almost no plant life grows in the Atacama. Some plants exist as **dormant**, or inactive, seeds that spring to life after a rain shower, which may come only once every ten years. There

are few animals in the Atacama besides rodents and insects. The chinchilla, a popular new pet, lives here. Llamas and alpacas, furry relatives of the camel, can also be found in damp areas near rivers and high in the mountains.

But what the Atacama lacks in animals, it makes up for in **minerals**. The Andes are volcanic mountains, and their volcanic activity brought copper, nitrates (an ingredient in fertilizer and explosives), and sulfur to the surface. Salt is also abundant here in marshy lakes. Mining companies build entire towns for workers who dig up these minerals. Port cities spring up along the shore where the minerals are shipped around the world. All food and water must be trucked in or shipped by boat. Because of the desert's unforgiving climate, miners are some of the very few people who have ever made their homes in the Atacama.



Miners loading minerals into carts



The city of Tucson, Arizona, lies in the Sonoran Desert.

Conclusion

So, what can you find in the desert that you might not have expected? Lakes of salt, dense fogs, and underground oceans of oil? Ancient civilizations, expert horse herders, and mining towns? You may have thought of deserts as empty, lifeless places. But for thousands of years, plants, animals, and humans have known deserts as sources of life, riches, and wonder.

Glossary

dormant (<i>adj.</i>)	inactive but able to become active again (p. 13)
evaporates (<i>v.</i>)	changes from a liquid to a gas; dries up (p. 4)
irrigation (<i>adj.</i>)	describing the practice of supplying water to land or crops to promote growth (p. 6)
minerals (<i>n.</i>)	solid, natural materials that do not come from a plant or animal (p. 14)
moisture (<i>n.</i>)	a small amount of water in the form of a liquid or a vapor (p. 12)
nomads (<i>n.</i>)	people who move from place to place with no permanent home (p. 10)
oasis (<i>n.</i>)	a fertile place in a desert where there is water (p. 6)
resource (<i>n.</i>)	a supply of something valuable or very useful (p. 7)

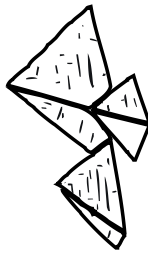
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Andes Mountains, 12, 13, 14	fog, 13, 15
camels, 4, 5,	Mongolia(n), 8, 9, 10
dunes, 4, 5, 6,	Nile, 6
Egypt, 6	oil, 7, 11, 15
	Tuareg, 5

Name _____

Instructions: In the first column, write what you already know about deserts. In the second column, write what you would like to learn about them. After you finish reading, fill in the third column with information you learned from reading the book and the fourth column with what you still want to know.

Before Reading		After Reading	
K What I know	W What I want to learn	L What I learned	S What I still want to know



Name _____

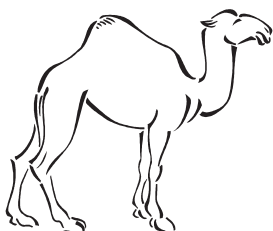
Instructions: Choose two words from the content vocabulary list that you are least familiar with. Write one word in each word box. Then write a definition for each, and use each word in a sentence of your own.

Word Box

Definition

Sentence

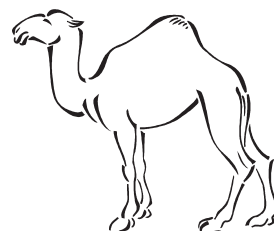
DESERTS DRY • LEVEL T • 2



Word Box

Definition

Sentence



SKILL: CONTENT VOCABULARY

Name _____

Instructions: Use the Venn diagram to compare the Atacama Desert with the Sahara Desert.

Sahara Desert

Different

Alike

Atacama Desert

Different

Name _____

Instructions: Use the words in the word box to create a hyphenated compound adjective to complete each sentence. Write the adjective on the line. Then use each hyphenated compound adjective in your own sentence.

moving	life	blocking	sun	giving
growing	low	quick	like	ocean

1. Great, _____ landscapes of yellow sand dunes cover the Sahara.
2. The Nile brings _____ water to crops and cities along its banks.
3. Powerful winds whip up _____ dust storms.
4. The Sahara is home to thorn trees, shrubs, and _____ grasses.
5. The rivers are usually steep, narrow, and _____.

My Sentences:

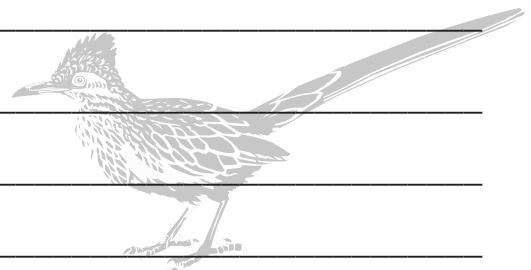
1. _____

2. _____

3. _____

4. _____

5. _____



A Trip to a Prehistoric Cave

A Reading A-Z Level T Leveled Reader

Word Count: 1,441

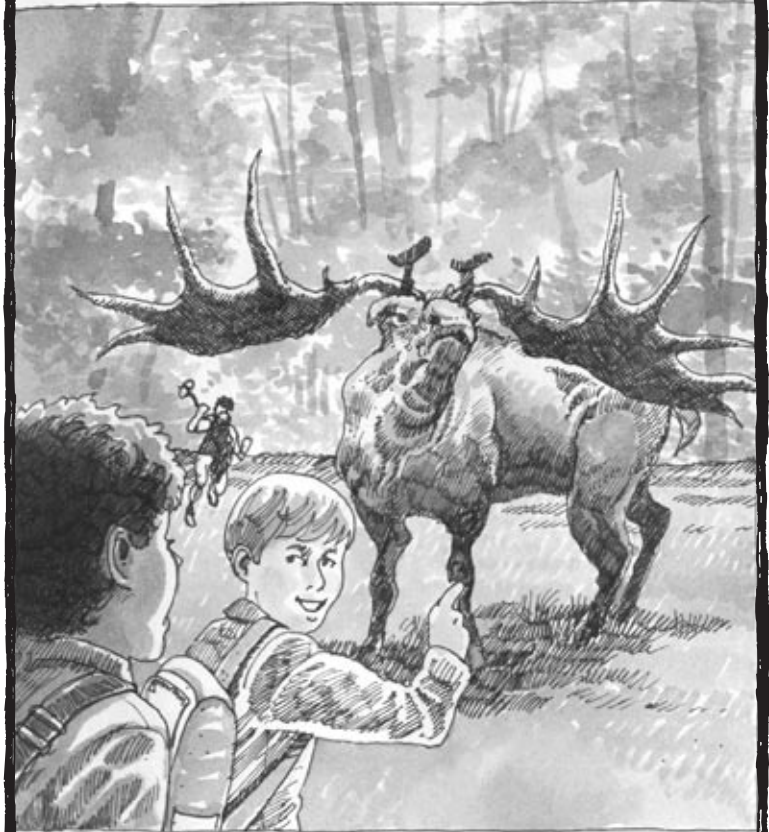


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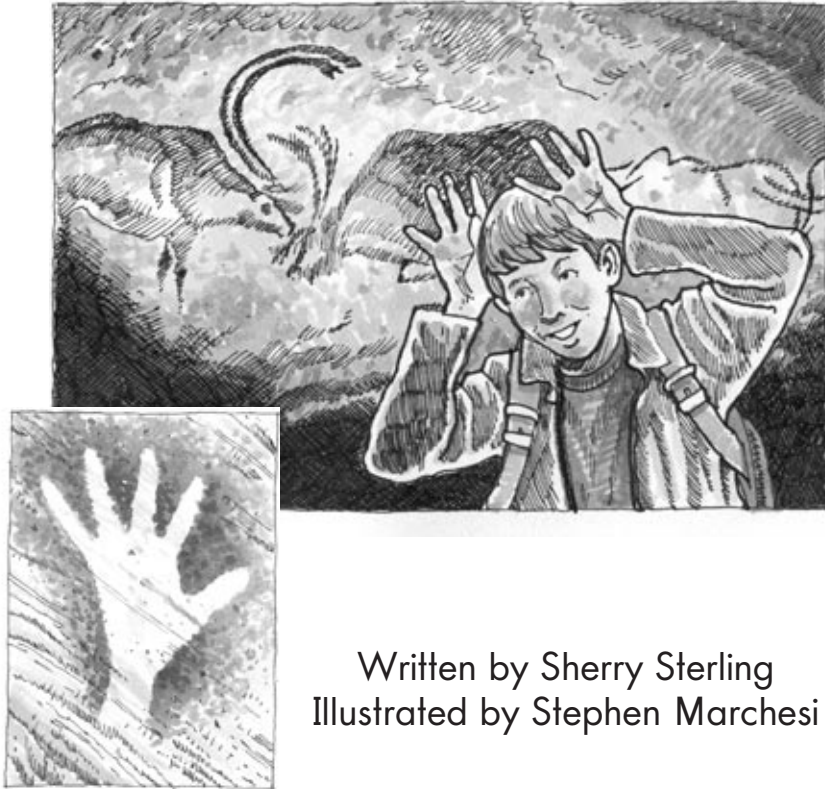
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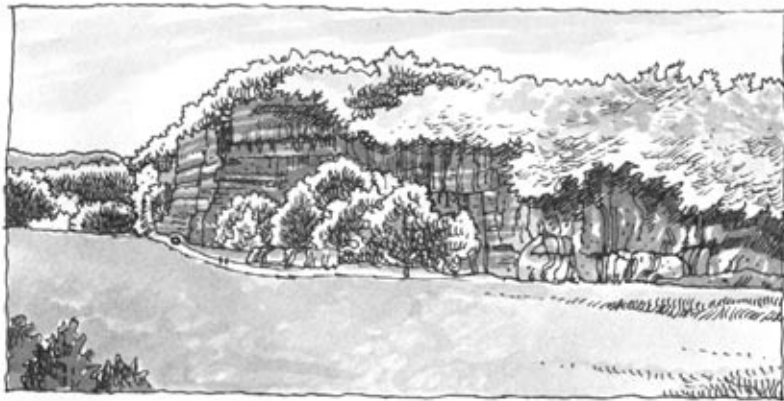


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Introduction

Eager to see stalactites and stalagmites, Emmanuel and Victor begged to see caves while driving through France. They were learning about caves in school and wanted to see some bats, too.

"Let's stop at Font de Gaume," said their dad. It's not far from here, in Les Eyzies (Layz Ay-ZEE)."





A Tour of Font de Gaume

Victor, Emmanuel, and their mom and dad signed up for a tour and walked up some steps to the mouth of the cave. A heavy, padlocked door blocked the entrance. Sitting in the shade with other families, they waited for the tour guide. When the tour guide arrived, she locked their backpacks and purses in a cabinet. This helps to protect the cave from objects brushing its sides. Then she offered a suggestion: "If you have jackets, keep them with you. It's much cooler in the cave."

Once inside, the boys' hearts sank. The cave was dry, which meant no new stalactites or stalagmites were forming. They also didn't see any bats flying around. Victor shuffled his feet and whined, "What's so great about this place?"

After walking 19.8 m (65 ft.), their tour guide used her flashlight to **illuminate** a scene painted on the cave wall. The group gasped in unison. They saw five bison painted in several colors, outlined in black and partly **engraved**.

"Wow—this is better than stalactites!" exclaimed Emmanuel.





Their tour guide shared that they were in one of the six most important caves in the world from the upper **Paleolithic** period. “Scientists think this cave was painted around 14,000 BC, when only modern *Homo sapiens* lived. A unique thing about this cave is that the paintings are **polychromatic**, which means they are made up of many different colors.”

Their guide led them deeper into the cave and shined her flashlight on another painting—this one showed reindeer. Victor noticed the antlers first, then found the edges of a body and laughed when he saw that one reindeer was licking the other.

Moving Pictures

The guide showed them another bison scene. She turned off her flashlight’s white light and switched to a red light. Moving it quickly, she imitated the flicker of fire and an amazing thing happened. A bison that looked pasted on the stone wall in the white light now seemed to come alive. Its side filled out, and it looked as if it were breathing. The painting seemed to leap off the rock with stamping hooves.

“Remember,” said the guide, “these paintings were made and viewed by people using torches, not flashlights. The flickering red light lets you see the surface of the rock through the paint. Now you can see the carved paintings in the light that ancient humans saw them.”

The group continued to wander through the cave. Victor and Emmanuel saw a bison with red horns, two deer with two bison, and a room decorated with little bison. Next, they saw two horses, one raising its forelegs.



“Here’s your stalactite,” the guide said, pointing to the hind legs of the horse. “Ancient painters used stalactites to help them represent movement. They used the unevenness of the rock to show the fullness of an animal’s body.”

“What kinds of paintings have you seen in this cave?” asked the tour guide.

A girl on the tour answered, “They’re all animals.”

“Right!” said the guide. “For thousands of years, cave paintings had only three kinds of subjects: animals, symbols, and people. There are no paintings of trees, plants, flowers, or the Sun.”

Types of Cave Paintings	
Animals	
Symbols	
People	



As they stepped out of the cave into the bright warmth of the summer afternoon Sun, Victor nudged his brother. "Remember when you were little and you drew a horse on the dining room wall?"

"Yeah, and Mom said, 'You're not a caveman! Use paper to draw on.'"

"When we asked Mom who cavemen were, she said they were people who lived in caves a long time ago."

The tour guide overheard the boys and said, "Actually, cavemen didn't live in caves. You can go to Prehisto Parc to see how people really lived when this cave was painted."

"Let's go!" chimed the boys eagerly.

Prehisto Parc

After the tour, the family ate sandwiches for lunch at a cafe and then drove up the road to Prehisto Parc. It was filled with life-sized scenes of Paleolithic hunter-gatherers. Each scene had a sign describing the history of the scene. Victor and Emmanuel learned about the people and their homes, food, and art.



incorrect

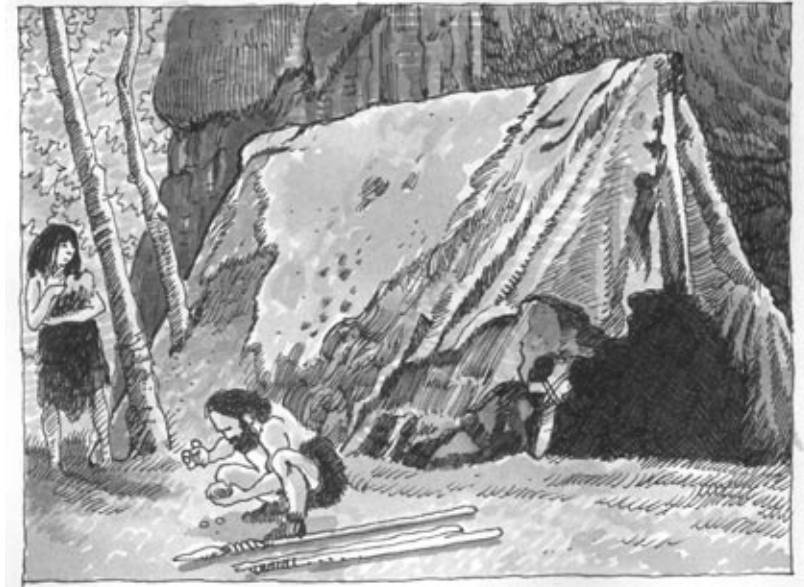


correct



The People

People today often think of cavemen as hairy humans who lived at the time of dinosaurs, wore animal skins, carried a club, and dwelled in caves. Victor and Emmanuel learned first that dinosaurs didn't have any human company. Second, the boys learned that while early humans may have worn animal skins, they probably carried spears, not clubs. And who would want to live in a damp, dark cave? Not even prehistoric people, according to the first sign.



Their Homes

"If these hunter-gatherers didn't live in caves, what *did* they live in?" Emmanuel asked.

The first few scenes in the park answered his question. Ancient people built lean-tos near rock **outcroppings** by stretching animal skins over wooden poles. To keep warmer during the cold winter, they dug into the ground to make a wall of earth. Mammoth bones and tusks made the walls strong. The roof was made with wooden poles and covered with reindeer skins and dirt.

One sign read: *Prehistoric builders carefully chose where to build their homes. They built their shelters in the spaces under rocks to keep out bad weather. To get the Sun's warmth in winter and the most shade in summer, their dwellings faced south or southwest. They also built homes near a water source, such as a spring or river.*



Inside the dwellings, Emmanuel and Victor saw that ancient humans had places for a fire, for sleeping, and for making weapons. A layer of flat stones kept the floor dry. Outside, the boys saw places to cut meat, cook meals, scrape skins, and make weapons and tools. The ancient people even had a place to put their garbage.

Their Food

The boys came upon a scene of a mammoth hunt. Their dad said, "This looks a bit different from going to the grocery store to get food."

The sign read: *To hunt, early humans worked together setting traps in the marshland. Then they **lured** an animal close to the trap. Once a mammoth fell into the trap, it got stuck in the mud, and men could more safely kill it by throwing spears.*

Emmanuel and Victor learned that prehistoric people probably fished more often than they hunted. Fishing was not as dangerous as hunting. **Archaeologists**, or people who study ancient cultures, have found fish hooks, nets, and traps.

This shows them that ancient people probably fished. They think early humans probably used harpoons to fish, as well as to hunt animals such as bears.





The boys' father, who had wandered ahead, came back to tell them of a scene down the path. "Hunting and fishing were not the only sources of food. Come read about this!"

Gathering was even safer than fishing, the boys read. While early humans didn't farm, they gathered and ate wild roots, berries, and mushrooms. They also found eggs and honey, and even ate **larvae** and mature insects.

"Yuck!" exclaimed the boys at the same time. They were so grossed out, they didn't even say *jinx*.

Their Art

Next, the boys saw a scene of an early human drawing on a cliff. "Maybe this will tell us more about the cave paintings," said Emmanuel.

The boys learned that early *Homo sapiens* liked to draw, often on animal bones and cave walls. These ancient people didn't just draw anything they saw in their world; they drew things that meant something to their hearts—maybe as an act of worship.

The scene's sign read: *Prehistoric painters used their fingers or brushes (made from hair or plants) to apply paint. They used yellow, red, and black paint made from minerals in rocks. For 20,000 years, they painted the same way, using the same three paints. They used the rock's shape to **enhance** their paintings and used tools to carve the surface.*





Conclusion

Victor, Emmanuel, and their parents took a canoe trip on the Dordogne (door - DOAN) River, passing castles and caves that dotted the golden cliffs. When the boys stopped paddling, their dad asked, "Are you getting tired?"

Victor answered, "I was imagining the paintings that might fill those caves up there."

"Wouldn't it be great to be the one who discovers them?" Emmanuel added. He was already dreaming of becoming an archaeologist and discovering more about the people who painted caves long ago.

Glossary

archaeologists (<i>n.</i>)	people who study prehistoric cultures (p. 16)
engraved (<i>v.</i>)	cut or fashioned for decoration (p. 6)
enhance (<i>v.</i>)	to improve or make better (p. 18)
<i>Homo sapiens</i> (<i>n.</i>)	modern human beings (p. 7)
illuminate (<i>v.</i>)	light up (p. 6)
larvae (<i>n.</i>)	worm-like forms of some insects when they are young (p. 17)
lured (<i>v.</i>)	to have led someone with the promise of something good; tempted (p. 16)
outcroppings (<i>n.</i>)	parts of a rock that stick out from their surroundings (p. 14)
Paleolithic (<i>adj.</i>)	describing a time from 750,000 to 15,000 years ago (p. 7)
polychromatic (<i>adj.</i>)	having many colors (p. 7)

Name _____

Instructions: As you read, identify the main idea and supporting details for one of the sections in the book *A Trip to a Prehistoric Cave*. Write the information on the lines provided below. Then use the information you've collected to write a short summary of the section.

Main Idea	Details

Summary

A TRIP TO A PREHISTORIC CAVE • LEVEL T • 1

SKILL: MAIN IDEA AND DETAILS/SUMMARY

Name _____

Instructions: You will need two different colored pencils, crayons, or markers. For each sentence below:

- Circle the subject and the conjunction (joining word, such as *and*, *but*, *or*, or *then*) using one color.
- Underline the first part of the predicate and the second part of the predicate using another color.

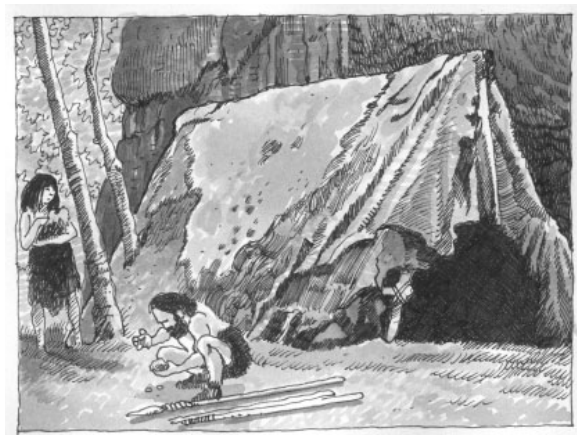
1. Their guide led them deeper into the cave and shined her flashlight on another painting.
2. She turned off her white light and switched to a red light.
3. Its side filled out, and it looked as if it was breathing.
4. The family ate sandwiches for lunch at a cafe and then drove up the road to Prehisto Parc.
5. The roof was made with wooden poles and covered with reindeer skins.
6. Ancient people gathered eggs and honey, and even ate larvae and mature insects.
7. They used the rock's shape to enhance their paintings and used tools to carve the surface.
8. Emmanuel was dreaming of becoming an archaeologist and discovering more about the people of long ago.



Name _____

Instructions: Below are words taken from *A Trip to a Prehistoric Cave*. Cut along the dotted lines to separate the boxes. Then move the boxes around on your desk to arrange the words in alphabetical order.

larvae	Paleolithic	lured
flickering	deer	cave
caveman	prehistoric	polychromatic
Victor	flashlight	decorate
dream	painters	plants



Art Around Us

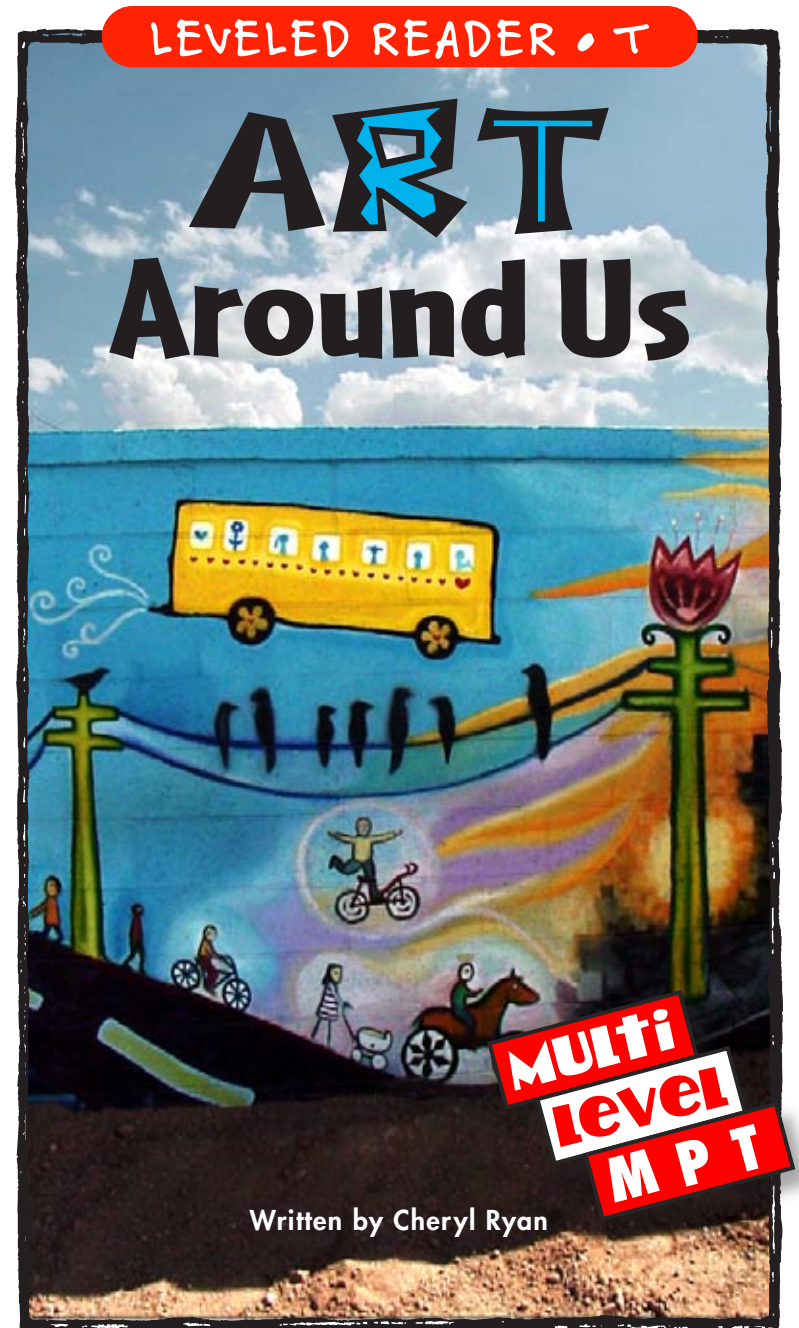
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Introduction

Having art all around us, in so many varieties, makes our world brighter and more interesting. Art isn't mysterious. It can be anything that an artist creates: a curvy glass vase, a painting, or a custom-built motorcycle! First, an artist has an idea, then plans the size and shape, and then chooses the materials to use. A work of art can make us smile or think, or it can simply be beautiful to look at. Art can make us want to learn how to make something ourselves!



Alfred Quiroz painted this picture of himself. It is a self-portrait.



Painters

Do you know what an Impressionist is? Or a Cubist, or a Surrealist, or a Primitive? They are all painters, and painters are often labeled by their painting style. Painters may have their own particular brush technique or prefer to smear on colors with a thin, metal blade called a palette knife. Others splash, spray, or drip their paint, and some even use mud! They may use different materials or techniques—but they are all painters.



Mural on a wall

A painter may choose an unusual surface as a canvas for his or her work, perhaps because of its shape, texture, or size. A painter might paint on a sheet of glass, on dishes, or paint a design on a piece of furniture. Many painters think big, so they create a wall-sized **mural** that is painted directly onto the wall. Outside, they paint a mural on the side of a building using waterproof colors so it will last.

Sculptors

Sculptors create art that has form and depth. It can be small, like a little carving that fits in your hand, or majestic, like the Statue of Liberty. Sculptors can use a **chisel** or a small axe to carve solid materials like wood, stone, ice or wax, or they might use a blowtorch to weld pieces of metal together. They might make **soft sculptures**—shapes created by piecing together strips of fabric, leather, or colorful yarns.



Wood sculptor



Metal casting in bronze

Whether it's an oversized statue, or a tiny frog, **casting** a metal sculpture takes several steps. The sculptor needs soft clay, wet plaster, and a hot, melted metal, such as bronze.

First, the sculptor makes a clay model of the shape, and then covers the model with a paste of wet plaster. The thick plaster dries into a hard mold of the original shape.

When the mold is ready, the sculptor pours hot metal into it and waits until it cools. When the sculpture is cool enough to touch, the sculptor carefully checks it for cracks, and then polishes it for everyone to see!

Potters

Bowls, vases, and plates that we call pottery are made by artists known as potters. Potters make their art out of different types of soft, heavy, wet clay. They put a lump of clay on a **pottery wheel**, which looks like a small, round spinning table. While the wheel is spinning, the potter pushes, pinches, and pulls the lump of clay into a shape. The potter pushes it one way to make a bowl and another way to make a plate.



Forming clay pottery



Baking clay pottery

The potter bakes the clay object in a very hot oven called a **kiln** (pronounced kill), which dries all of the water out of the clay. Once it's baked dry, the clay material is called **ceramic**. To make the ceramic colorful, and often waterproof as well, the potter uses a special paint called a **glaze**, which gives it a smooth, shiny surface.

Glassblowers

Glass art seems to glow. Light flows through it and makes the colors extra bright.

Glassblowers make their art out of a blob of soft, melted glass. They scoop up the hot, soft glass with the end of a long, hollow metal tube called a **blowpipe**, and then blow air through the pipe. The air creates a bubble in the glass blob, and the bubble can become almost any shape the artist wants. Glassblowers keep the glass soft and workable by frequently returning it to the fire. While it's hot, they can twist, pull, and stretch it into the shape they imagined.



A glassblower shapes a ball of glass.



Hot glass is soft and can be shaped in many ways.

Glassblowers work very quickly, but they must also be careful. Glass breaks easily. While the glass is soft, it's easy to work with and to shape. Swirling lines, brightly colored dots, or bits of metal can be added, or a handle can be put on the side. But once the piece cools, it is no longer workable and can shatter into pieces.



A glass sculpture

Fiber Artists

Thread, yarns, and pieces of fabric are used to make fiber art. A work of fiber art may be as tall as a room and hung from the ceiling, or may be the size of a delicate placemat on a table. Fiber artists love to create patterns of soft texture and color.

One fiber artist, called a **weaver**, loops yarns over and under each other on a weaving machine called a **loom**. The loom keeps the work threads even and the design organized. Weavers create colorful rugs, blankets, mats, clothing, and wall hangings.



Weaving loom





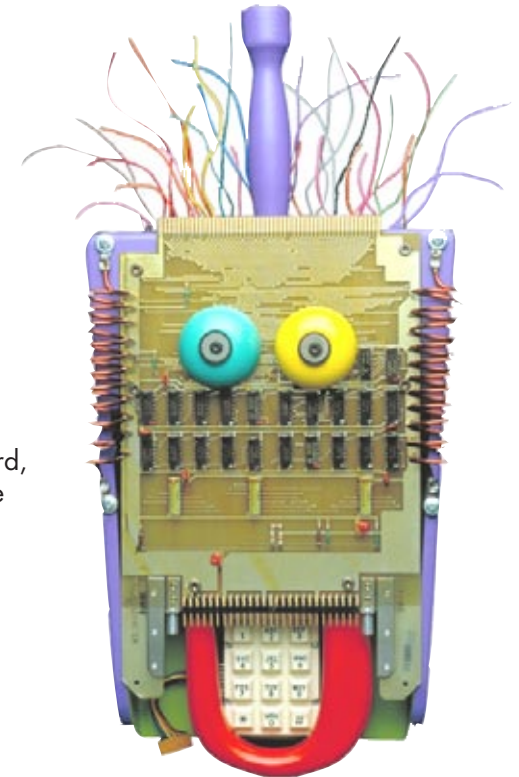
Quilters

Quilters arrange small pieces of cut fabric into a design pattern, and then sew them together. Quilting began as a practical solution to a need many years ago, when buying new fabric was very expensive. People saved money by using fabric scraps from old clothes to make their bed covers. Those first quilts were simple patchwork designs. Over time, bed covers became beautiful works of art, created by talented quilters who combined colors and cut fabric pieces into rich designs.

Unusual Art

Some imaginative artists make **found object art**. They use rusty junk, old car parts, wheels from toys, discarded wire, and other everyday materials that they find. Other artists may place a familiar object, such as a water fountain, in a museum display, to prompt us to look at it differently. They want us to see it as a design —as art—instead of only seeing its function as a commonplace water fountain.

An artist made this funny face using a wooden cutting board, a circuit board, telephone bells, a telephone keypad, industrial springs, and wire.





Many sand castles are true works of art.

While their work may only last until the next tide takes it away, sand artists create elaborate sculptures on the beach using rocks and sand. Environmental artists often create artwork that becomes part of a park or garden. They may incorporate rocks, graceful tree branches, grasses, and other plants into their artwork.

Take a walk inside a work of art! An art **installation** is very large. It is often an entire room or even a whole building that has been made into one big piece of artwork. Installation artists create environments that reflect the ideas they want you to experience. The spaces may be filled with objects, colors, shapes, sounds, and lights to create a special atmosphere. Walk on in!



An installation uses a whole room to make art.

Where Art Is Found

Long before we had written language, humans spoke through art. Simple drawings over 40,000 years old have been found scratched into rocks. Caves in France and Spain have primitive drawings of animals that were made over 13,000 years ago. In the ruins of ancient cities, scientists find pottery, wall murals, **mosaics**, and small carvings of animals and people.



(left) An ancient cave drawing (right) Pueblo pot

Artists want you to see what they have created. Explore and discover. Visit an art museum or an art gallery, or walk through an art fair.



(top) Art museum
(bottom) Public art comes in many shapes and sizes.



A mural of a lighthouse creates an interesting illusion.



Elephant sculptures add fun to a park.

Look around you. Somewhere in your own town, you'll find a tall outdoor sculpture, or a large mural on a wall. Many towns have set aside special areas for artists to display their work. Your town might even have a sculpture park where you can see several styles of art at one time.

Why not make your own art? You can create any type of art that you like. Use soft, colored chalk to draw on a sidewalk. Paint a picture of your pet and make a frame for it. Use clay, snow, or sand to make a sculpture. Tie little bunches of sticks together to make an animal

shape and spray it with color. Glue pieces of shells, stones, and wood onto a picture frame for a photo of your family. It's all art!



Artists use their artwork to tell a story or to express how they feel about something.

But art doesn't have to be serious or hard to do. Artwork can be interesting, or colorful, or funny, or simply beautiful to look at. The ability to see and enjoy art makes our lives more fun.

Look for art around you. It's everywhere!



Glossary

blowpipe (<i>n.</i>)	a long, hollow, metal tube used to blow air bubbles into melted glass (p. 12)
casting (<i>v.</i>)	pouring hot metal into a mold and letting it harden (p. 9)
ceramic (<i>n.</i>)	baked, dried clay that keeps its shape (p. 11)
chisel (<i>n.</i>)	a sharp steel tool used for shaping stone, wood or metal. (p. 8)
found object art (<i>n.</i>)	art made from everyday objects an artist has found (p. 16)
glaze (<i>n.</i>)	a special paint that seals or decorates ceramics (p. 11)
installation (<i>n.</i>)	a whole room or building made into a work of art (p. 18)
kiln (<i>n.</i>)	a very hot oven where clay bakes into ceramic (p. 11)
loom (<i>n.</i>)	a machine that loops yarn into strips of fabric (p. 14)
mosaic (<i>n.</i>)	design made from tiny colored pieces such as paper, tile, or beads (p. 19)
mural (<i>n.</i>)	a big painting painted onto a wall or building (p. 7)
pottery wheel (<i>n.</i>)	a spinning wheel that forms clay into round shapes (p. 10)
soft sculpture (<i>n.</i>)	sculpture made with fabric, yarn or other soft materials (p. 8)
weaver (<i>n.</i>)	an artist who makes fabric out of yarn or thread, often by using a loom (p. 14)

Name _____

INSTRUCTIONS: On the blank after each statement, write an "O" if the statement is an opinion.
Write an "F" if it is a fact.

1. Some painters create murals on walls.

2. That mural on the wall is very beautiful.

3. Pottery wheels are fun to operate!

4. When glass is hot and gooey, artists add color.

5. Weavers loop colored yarn on a loom.

6. Quilters are not really artists.

7. Sand castles are considered works of art.

8. That sculpture of a cow is ugly.

9. Art is everywhere.

10. The hardest-working artists are sculptors.

Name _____

INSTRUCTIONS: Write each verb in the present tense.

Past Tense

Present Tense

1. decorated

2. created

3. illustrated

4. displayed

5. painted

6. invented

Name _____

INSTRUCTIONS: Choose a word from the word bank to write an antonym for each word.

Word Bank

dry
slippery

dark
original

thick
separate

1. sticky

2. thin

3. light

4. join

5. copy

6. wet

Earthquakes, Volcanoes, and Tsunamis

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Smoke rises from what seems to be a peaceful volcano.

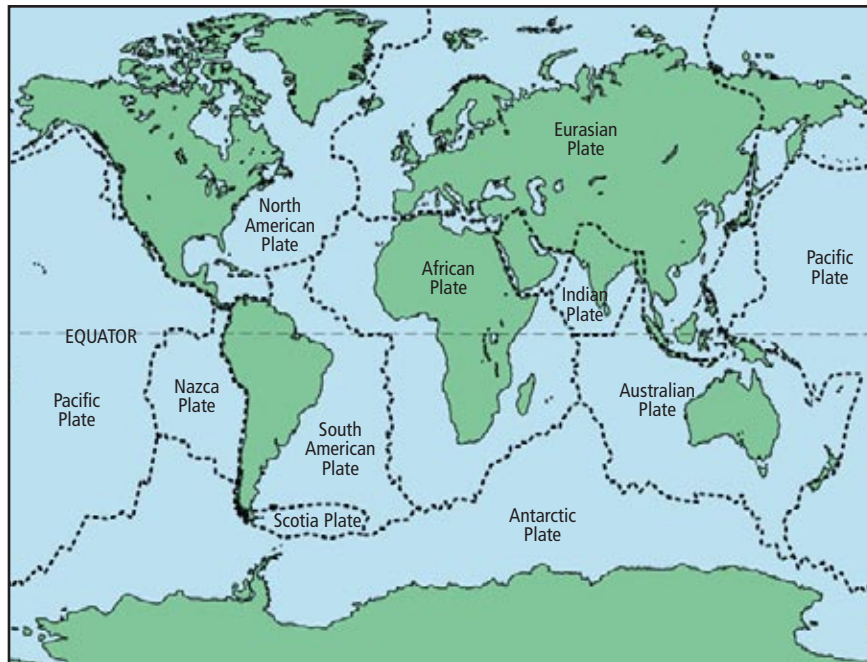
Introduction

We usually think of the ground and the ocean as peaceful things. The ground lies quietly beneath our feet, and the ocean laps gently against the shore. But forces deep within the earth can suddenly destroy that peacefulness. These forces cause violent shakings called **earthquakes**; explosions of ash, gases, and hot rocks called **volcanoes**; and huge waves called **tsunamis** (tsoo-NAM-ees). In this book, you will read about these amazing events and the forces that cause them to happen.

Deep Within the Earth

Beneath the soil, rock, and water on the surface of our planet, the earth is constantly changing. The top layer of Earth is made of giant pieces of rock, like the pieces of a puzzle. The pieces of rock, called **plates**, make up continents and ocean floors. Where the edges of the plates come together, there are often cracks and gaps, called **faults**.

Tectonic Plates



The dotted lines show the edges of the plates.

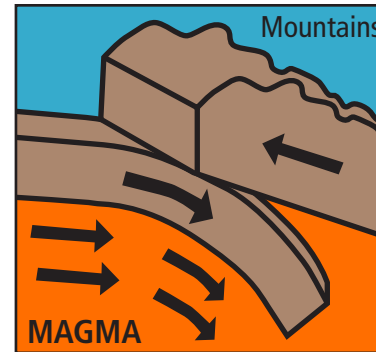


Fig. 1

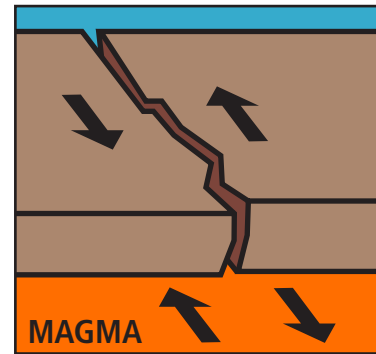


Fig. 2

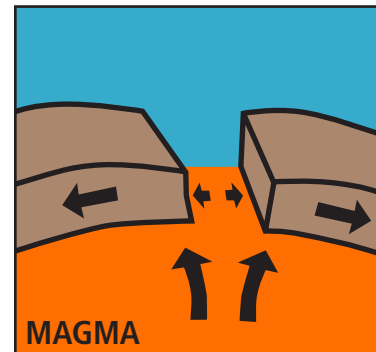


Fig. 3

Underneath the plates, the earth is very hot. It is so hot that rock melts into a liquid called **magma**. The plates float on top of this liquid magma. The magma is always moving, dragging the plates around with it.

At the edges of the moving plates, three different things can happen. If the plates are moving against each other, one plate slides over or under the other plate (Fig. 1). If the plates are moving past each other, the edges of the plates grind together (Fig. 2). And if the plates are moving apart, they make a gap where magma seeps out (Fig. 3).



Earthquakes can damage or even destroy buildings.

Earthquakes: Terrible Trembling

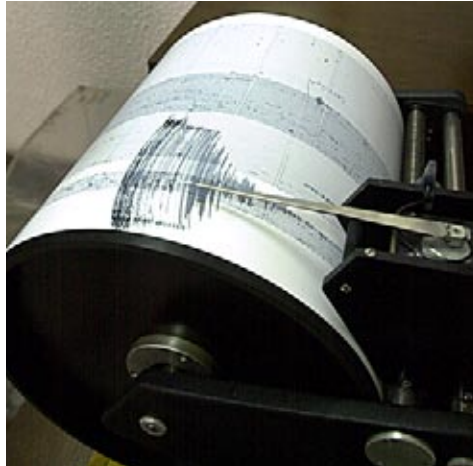
The plates usually move very slowly. But sometimes large pieces of the plates get caught. The plates keep trying to move, but these large blocks of rock hold them back. The pressure and energy build up. Then, suddenly, the rocks give way, releasing all that pressure and energy. The plates jerk forward, and the ground shakes. Far above, on the surface, people feel an earthquake.

In a small earthquake, the ground shakes a little, causing some hanging objects to swing. Tree branches sway, as if there were a gentle breeze. Some earthquakes are so small that we do not notice them. But sometimes the shaking is so strong that buildings crumble, bridges collapse, and large cracks open in the ground over large areas.



The ground here was ripped open by an earthquake.

We measure the strength of earthquakes on an instrument called a seismograph (SIZE-moh-graf). Each earthquake is given a number, depending on its strength. The numbers are from the **Richter** (RICK-ter) **scale**. You can look at the chart on the next page to learn what the different strengths of earthquakes feel like. For each number on the Richter scale, an earthquake is ten times as strong as the previous number. A 6.0 earthquake is ten times as strong as a 5.0 earthquake. It is one hundred times as strong as a 4.0 earthquake! The largest earthquake ever recorded measured 9.5 on the Richter scale. It occurred on the coast of the South American country of Chile. Scientists are still learning about these dangerous events. One day, they may be able to warn people before earthquakes occur.



A seismograph

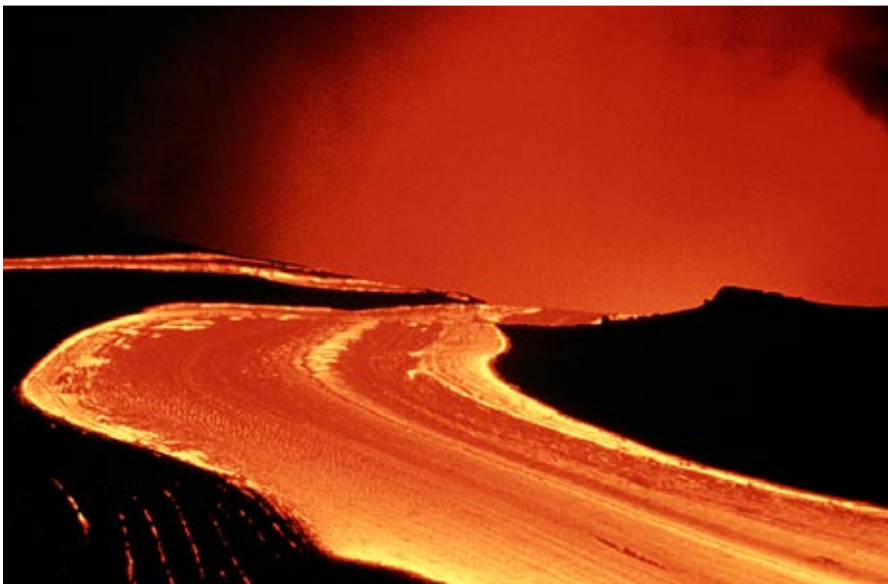
The Richter Scale

- 1 People cannot feel the earthquake—only sensitive instruments can detect it.
- 2 People usually do not feel it; some people in tall buildings may sense a slight swaying.
- 3 Many people near the origin of the earthquake notice the shaking. No damage occurs.
- 4 People at the origin of the quake definitely feel it. Hanging objects sway. Water sloshes in swimming pools. Some weak buildings may be damaged.
- 5 Felt over a wider area. Usually lots of damage to weak buildings at and around center. Some damage to strong buildings.
- 6 Lots of damage to weak buildings; some damage to strong buildings. Damage can spread over 160 kilometers (100 mi.).
- 7 A very major earthquake. Most buildings at the center are destroyed. Cracks form in the earth. Underground pipes break. Large landslides can occur.
- 8 Buildings and bridges destroyed. Large cracks appear in the ground. Large landslides.
- 9 The ground appears to move in “waves.” Entire rivers may move. Objects can be thrown into the air. Total destruction of buildings and other structures.

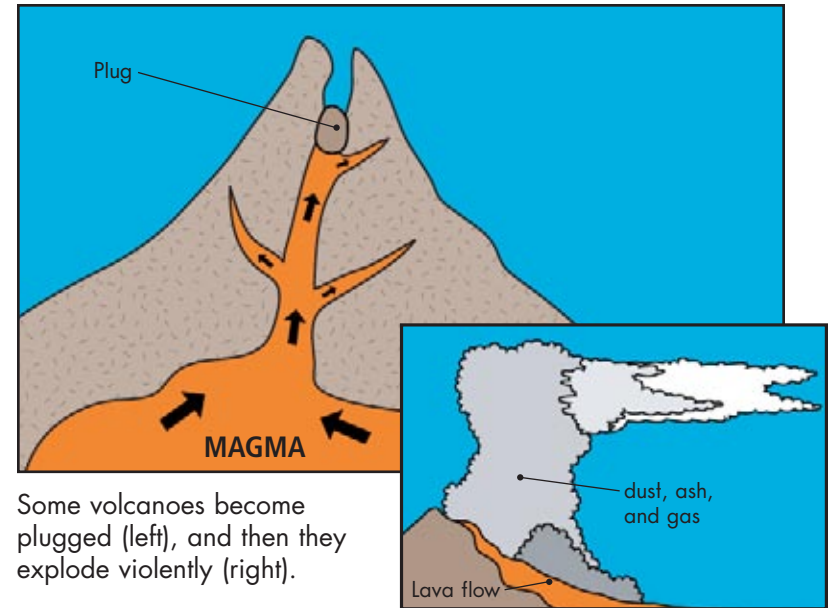
There is no top to the Richter scale, but the strongest earthquake ever recorded was a 9.5.

Volcanoes: Enormous Explosions

A volcano occurs wherever magma from deep inside the earth comes out through a crack in the surface. Volcanoes usually happen near the edges of the plates, where there are many cracks and thin spots where the magma can leak out. When the magma pours onto the surface, it hardens, often piling up into a mountain. Sometimes, the liquid rock flows peacefully out across the land. This is how many of the active volcanoes on the Hawaiian Islands behave.



Runny liquid rock on this Hawaiian volcano flows smoothly, like a peaceful river.



Some volcanoes become plugged (left), and then they explode violently (right).

But sometimes, the hot magma cools before it gets to the surface. It hardens into a solid piece of rock, plugging up the crack or hole where it had been seeping out. It acts like a plug in a bottle. The magma continues to push upward. Hot gases in the magma press against the plug. The pressure gets greater and greater. Suddenly, the volcano explodes. Huge chunks of rock burst from the volcano. Entire mountainsides can be ripped away. Hot, poisonous gas, ash, and melted rock shoot into the sky. The volcano erupts with unbelievable power.

Many dangerous and destructive things happen during volcanic eruptions. When mountains explode, they send tons of rock rolling down their sides. These falling rocks are called **landslides**. Landslides can bury whole cities. They can block rivers, causing floods. Clouds of



Mount St. Helens, in Washington State, before it erupted in 1980

ash and dust rise into the air during volcanic eruptions. The ash falls to the ground like



Mount St. Helens after it erupted

sunlight. The temperature of the entire earth can cool down after a large volcanic eruption.

snow. The ash is so heavy that the roofs of houses can collapse under its weight. An ash cloud can spread all around the world. Large ash clouds can even block out



These trees were blown over by the explosion of Mount St. Helens.

A volcano can cause an explosion of extremely hot, poisonous gases. The explosion can be so powerful that it knocks over entire forests, and so hot that it starts destructive fires. Some large volcanoes have snow and ice on top. The hot gases melt all the snow and ice at once, and the water rushes down the mountain. This large, dirt-filled flood is called a **mudslide**. A mudslide is like a liquid landslide.

Scientists are not yet able to predict when earthquakes will happen. But fortunately they have gotten very good at predicting when a large volcano is about to erupt. In 1991, scientists warned the people living around a volcano in the country of the Philippines that the volcano was about to erupt. Many people left the area and found safety before the huge volcano erupted.



Scientists gather information from a volcanic fissure.



Tsunamis are the largest waves in the world.

Tsunamis: Wild Waves

Tsunamis are huge waves caused by earthquakes or volcanoes. They used to be called “tidal waves.” But the word “tidal” means something to do with the ocean’s normal tides, and tsunamis have nothing to do with the tides. Tsunamis can be as high as a football field is long. They are the largest waves in the world.

The edges of the plates, where earthquakes and volcanoes often occur, usually lie near the edges of the oceans. The shaking of an earthquake or the explosion of a volcano can cause large landslides. Entire hills can collapse, and sometimes they fall into the sea and make huge waves. Earthquakes and volcanoes can also be found under the sea. Underwater earthquakes cause the sea floor to move violently. Undersea volcanoes cause explosions under the water. Both of these events create huge waves that spread across the surface of the ocean.

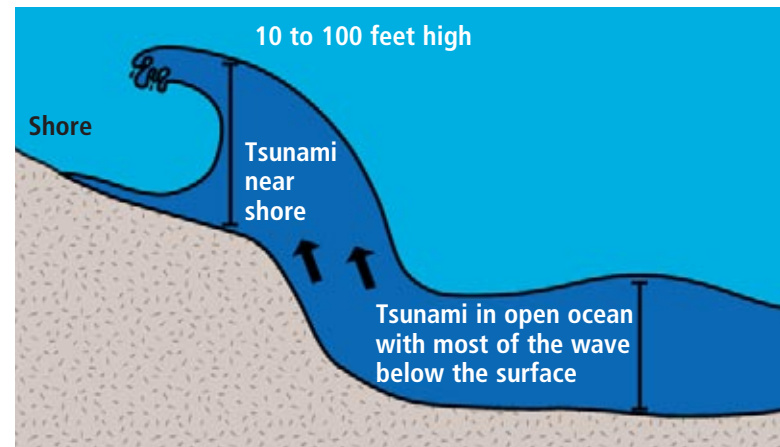


Steam rises from a volcano near the sea.

Tsunamis speed outward away from their source in all directions. A tsunami can cross an entire ocean. Tsunamis travel extremely fast—up to 320 kilometers per hour (200 mph).

In the open ocean, tsunamis may not be very high above the surface of the water, but they are very deep. As tsunamis approach land and move into shallow water, the elevated ocean floor pushes the wave upward. The wave slows to about 70 kilometers per hour (45 mph), but the ocean floor lifts it higher and higher. By the time a tsunami reaches land, it is tall enough to destroy almost anything in its path.

When a Tsunami Wave Reaches Shore



When tsunamis approach the shore, they break as giant waves.



Damage from a tsunami

The largest tsunami ever recorded came ashore along the coast of Alaska. It was taller than the world's tallest building. But this wave was in a very small bay, only a short distance from the landslide that caused it. Most tsunamis are not that high when they reach shore. They are usually between one and ten stories high. That might not sound very high, but it is hard to imagine the power of this much moving water. Most coastal towns and villages are much less than 30 meters (100 ft.) above the sea. Even a small tsunami can destroy houses, streets, and entire towns. A tsunami caused by a volcano in Indonesia killed 36,000 people in 1883.

Like volcanoes, tsunamis are becoming easier to predict. They usually do not hit the shore until a few minutes to a few hours after the earthquake or volcano that causes them. Scientists have instruments that detect volcanoes and earthquakes. When a large one happens, scientists have time to warn people that a tsunami may be coming. Unfortunately, the system cannot warn people in time to save their homes or belongings. But they do have time to save their lives, which is the most important thing.



Many people describe tsunamis as "walls of water."



An earthquake destroyed this building.

Conclusion

Our quiet planet occasionally turns violent. During a large earthquake, the ground shakes, destroying homes and property. In an explosive volcanic eruption, liquid rock, poisonous gases, ash, and landslides can bury cities. And tsunamis can cause billions of dollars in damage along coastlines. Scientists are trying to learn as much as they can about these violent events. As they learn more, scientists can predict volcanoes, earthquakes, and tsunamis in order to save thousands of lives.

Glossary

earthquake (<i>n.</i>)	a shaking of the ground caused by rocks moving under the surface of the earth (p. 4)
faults (<i>n.</i>)	cracks in the surface of the earth, usually around the edges of plates (p. 5)
landslides (<i>n.</i>)	when soil and rock collapse and fall down a hill or mountainside (p. 13)
magma (<i>n.</i>)	hot, liquid rock from deep inside the earth (p. 6)
mudslide (<i>n.</i>)	a dirt- and debris-filled flood of water (p. 14)
plates (<i>n.</i>)	the giant pieces of rock and soil that make up the surface of the earth (p. 5)
Richter scale (<i>n.</i>)	the scale that measures the strength of earthquakes (p. 9)
tsunamis (<i>n.</i>)	enormous ocean waves caused by earthquakes or volcanoes (p. 4)
volcanoes (<i>n.</i>)	places on the Earth's surface where hot, liquid rock seeps or explodes out (p. 4)

Name _____

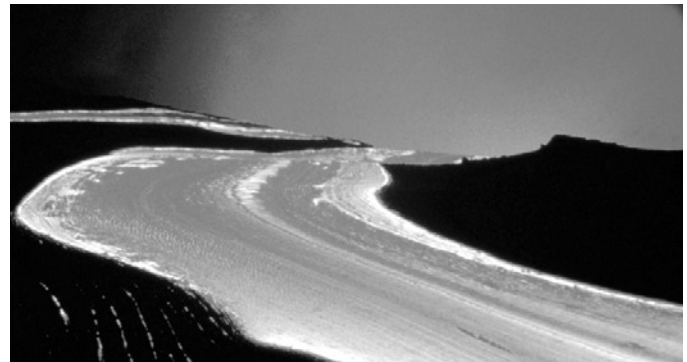
INSTRUCTIONS: In the first section, write what you already know about earthquakes, volcanoes, and tsunamis. In the second section, write what you would like to know about them. After you finish reading, fill in the third section with what you learned about earthquakes, volcanoes, and tsunamis.

<i>What I know</i>
<i>What I want to know</i>
<i>What I learned</i>

Name _____

INSTRUCTIONS: Place commas between the items in each list in the sentences below.

1. Faults can be gaps cracks or breaks in the earth's plates.
2. Earthquakes can shake buildings roads and trees.
3. Gas ash and rock are blown out of volcanoes.
4. Landslides can cause damage to rivers buildings and people.
5. Volcanoes can cause fires landslides and mudslides.
6. Tsunamis are fast large and dangerous waves.
7. A small tsunami can destroy houses streets or towns.
8. Floods fires and landslides can be caused by earthquakes.



Name _____

INSTRUCTIONS: Underline the compound word or words in each sentence. For each compound word, write each smaller word in a box and the definition of each smaller word on the line below the box.

1. Tsunamis can occur after large mudslides.

2. Landslides can cause entire mountainsides to collapse.

3. These waves can be as high as a football field is long.

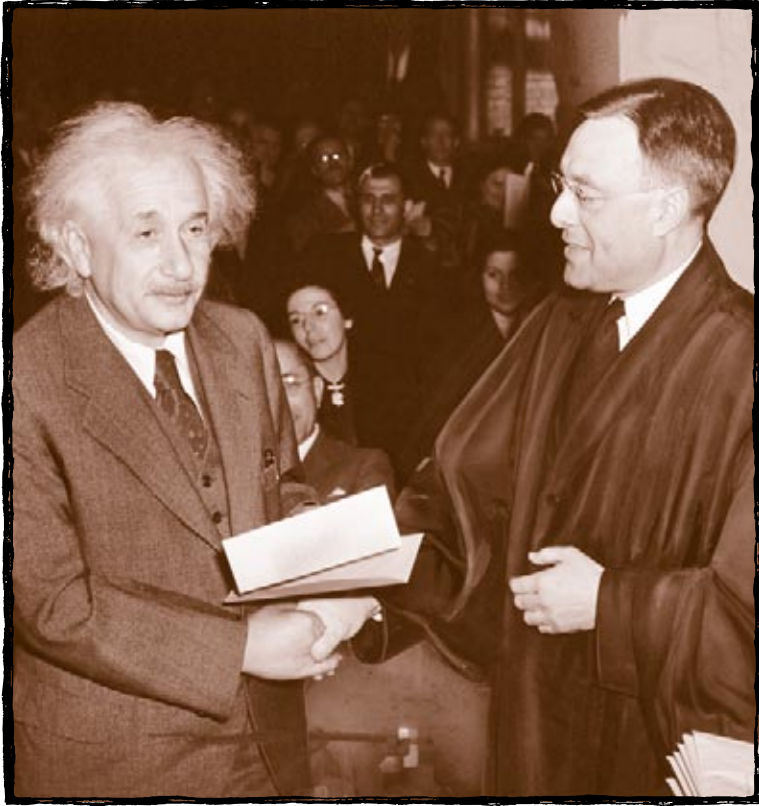
4. Underwater volcanoes cause tsunamis.

5. Many volcanoes occur near coastlines.

Albert Einstein

A Reading A-Z Level T Leveled Reader

Word Count: 1,516

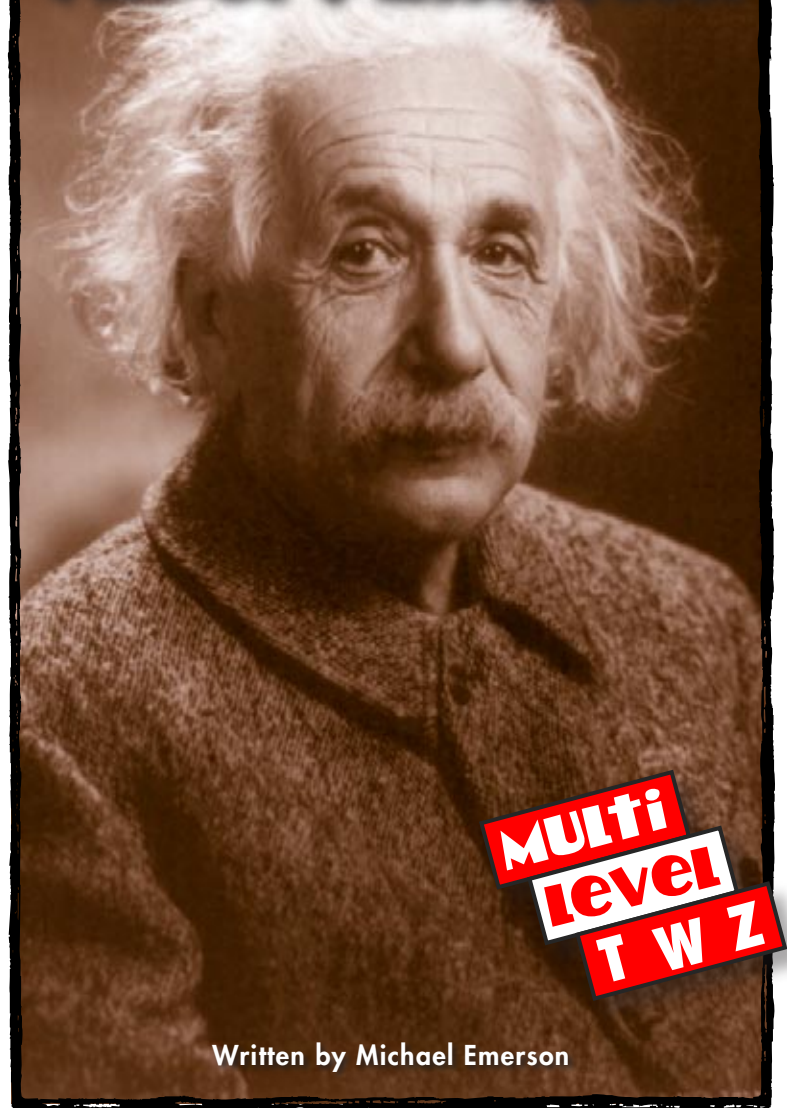


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Albert Einstein

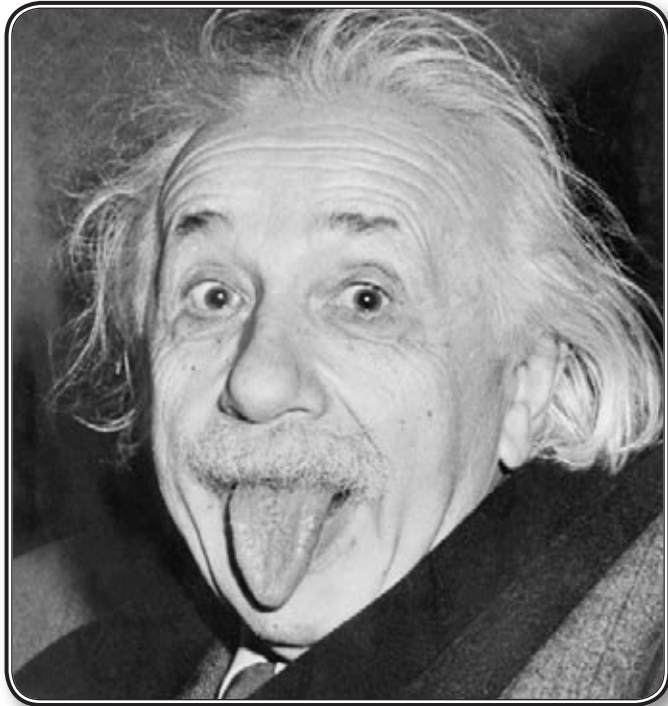


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Back cover: Einstein receives a certificate of U.S. citizenship from Judge Phillip Forman in 1940.

Albert Einstein
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Deeply Hidden Things

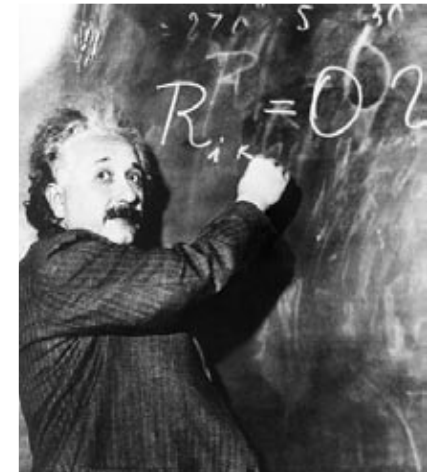


"Knowledge of what is does not open the door directly to what should be."

When Albert Einstein was five years old, his father showed him a **magnetic compass**. Einstein was curious. Why did the compass's needle stay still while his father turned its casing around and around?

Einstein was too young to know the answer back then. Later on, he wrote that the compass had taught him an important lesson—that "something deeply hidden" was "behind things." That

curious little boy grew up to become a curious scientist. He spent his life trying to identify that "something." In doing so, Albert Einstein forever changed the way people think about the **universe**.



Einstein's curiosity about complex problems led to great discoveries.



Einstein played the violin from childhood through adulthood.

A Talented, Curious Boy



*"A table, a chair, a bowl of fruit and
a violin; what else does a man
need to be happy?"*

Albert Einstein was born on March 14, 1879, in the small town of Ulm, Germany. Einstein's family had a strong influence on his life. His younger sister, Maja, was his closest childhood friend. His mother, Pauline, encouraged Albert to take up the violin when he was six. His violin would be a constant companion for the rest of his life.



Albert Einstein with his sister, Maja

Do You Know?

As a child, Einstein had a curious speech habit. Whatever he said out loud, he would then say again to himself in a very quiet voice. He eventually outgrew this habit and became an accomplished public speaker.

Einstein's father and two of his uncles introduced Einstein to math and science when he was young. One of his uncles taught him **algebra** by making it into a game. A family friend brought him several books about science and mathematics. Einstein would read the books for hours at a time. He especially liked a book about **geometry**.



"Teaching should be such that what is offered is perceived as a valuable gift and not as a hard duty."

In school, Einstein's talent for math and science was clear. However, he questioned the way the school taught him. To young Einstein, the teachers just drilled their students to memorize useless information. Einstein liked to think creatively, not just memorize.

When he was only 17 years old, Einstein was accepted at one of the best scientific universities in Europe. Once again, Einstein's curiosity about how and why things worked led him to do things his own way. He often skipped classes to spend more time on his own ideas. His professors thought that Einstein might have a bright future—if he would do as he was told.



"Imagination is more important than knowledge."



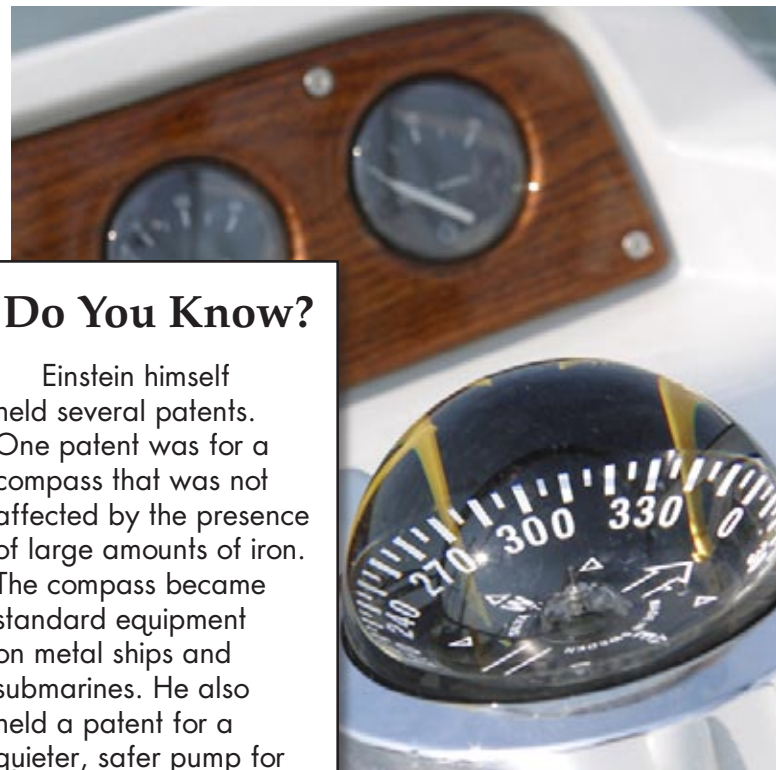
Einstein's creative thinking was honored with a U.S. stamp.

The Patent Office

Einstein had trouble finding a job after finishing school in 1900. His independence and curiosity made him unpopular with the teachers who could help him find work. In 1902, he took a job in a **patent** office in Bern, Switzerland. His job was to make sure that devices submitted for patents worked the way their inventors said they did. The job in the patent office allowed Einstein to do what he did best—pursue his curiosity and question the ideas of others. On his first day at work, Einstein's boss told him, "When you pick up an application, think that anything the inventor says is wrong."



Einstein worked at the patent office in Bern, Switzerland.



Do You Know?

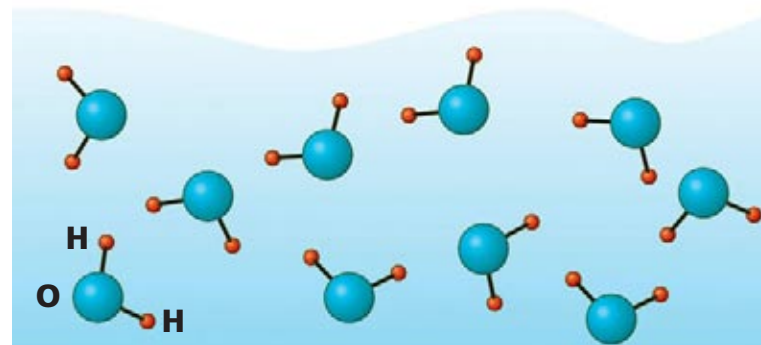
Einstein himself held several patents. One patent was for a compass that was not affected by the presence of large amounts of iron. The compass became standard equipment on metal ships and submarines. He also held a patent for a quieter, safer pump for refrigerators.

The money and work schedule gave Einstein the freedom to pursue his own ideas. In his spare time, he met with a group of friends who shared his curiosity about scientific ideas. They called themselves the Olympia Academy. It was during these years of steady work and strong friendships that Einstein began working on ideas that would change science forever.

The Miracle Year

By 1905, Einstein had worked in the patent office for three years. During that time, he developed new scientific theories. He soon felt confident enough in his ideas to share them.

Einstein sent papers explaining his ideas to the leading German scientific journal of the time. The journal published the first of these papers in March 1905. Four more soon followed. Einstein's first paper explained what light is and how it acts. The second and third papers proved the existence of tiny parts of matter, called molecules and atoms, and described how they moved. The final two papers offered new explanations of the relationships among space, time, and objects in motion.



Water molecules (H_2O)

Scientists were **astounded** by what they read. In six months, Einstein changed the way they had thought about the universe for over two hundred years! They were amazed that these ideas came from a curious 26-year-old patent clerk instead of a professor of **physics**.

Einstein's career in science began to take off. He received invitations to explain his new ideas at scientific meetings. The 1905 Nobel Prize winner in physics contacted Einstein to congratulate him. A well-known professor of physics named Max Planck even began to teach Einstein's ideas to his students. In time, 1905 came to be known as Einstein's "miracle year."



Physics professor Max Planck taught Einstein's theories in his university classes.

A Rising Star



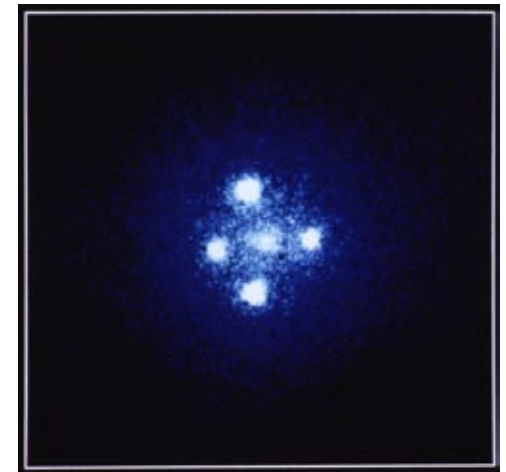
"The most incomprehensible thing about the world is that it is comprehensible."

In 1909, Einstein finally received an offer to teach at a university. He took the job, but ended up teaching at different schools over the next few years. He was searching for the ideal place for his research.

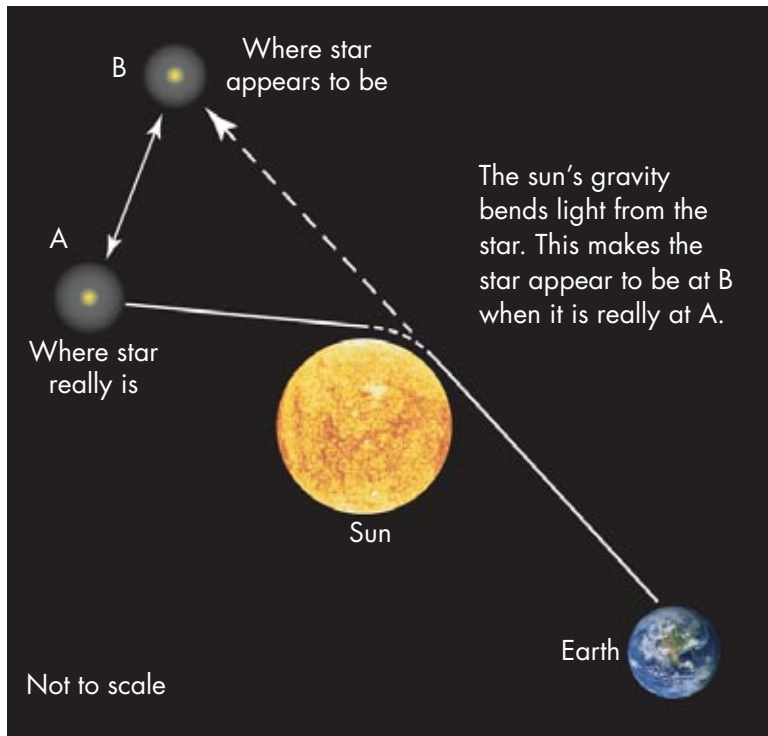
Meanwhile, he continued to develop his earlier ideas in new ways. It was hard work, and Einstein often thought he was on the wrong track.

His ideas were so new and unfamiliar

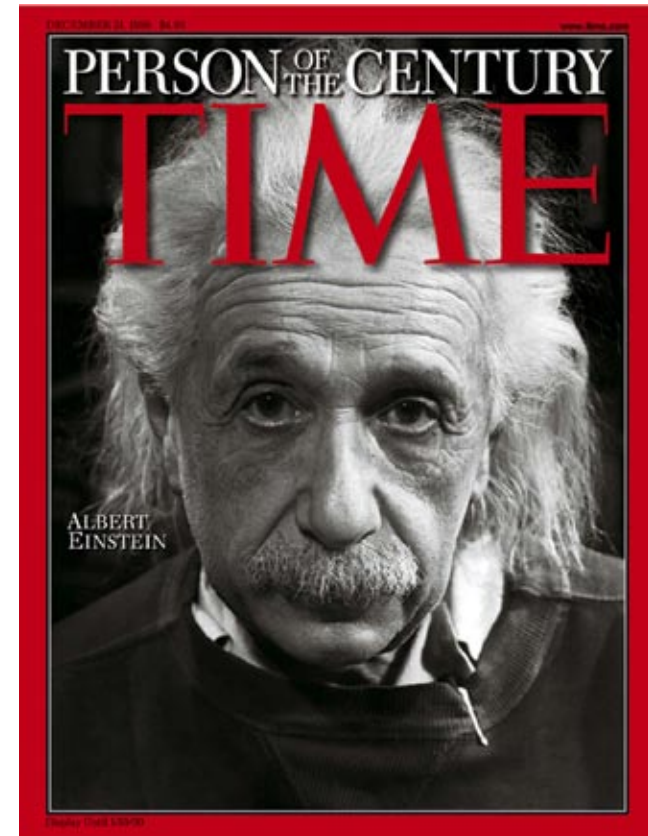
that he said they almost drove him crazy. Then, in 1915, he had a breakthrough. He finally figured out how to combine his earlier ideas into one system. He called the system the General Theory of Relativity.



Einstein's ideas revolutionized modern astronomy.



Einstein's ideas once again excited scientists around the world. In 1919, British scientists tested his theory by measuring the position of a star during a **solar eclipse**. If Einstein was correct, the star would appear to be in one position while it was actually in another. The star appeared almost exactly where Einstein said it would be! Newspaper headlines around the world announced the findings. Overnight, Albert Einstein became one of the most famous people in the world.



Einstein was named "Person of the Century" by Time Magazine.

Not everyone was pleased with Einstein. Many scientists had built their careers on ideas that Einstein tossed aside. Others did not want to believe Einstein's theories because they were difficult to test. Einstein knew that his theories were not perfect. Yet with each new paper, more and more people came to understand the importance of Einstein's work.



News reporters greet Albert Einstein and Elsa, his wife, arriving in New York in 1921.

The Uses of Fame



***"Try not to become a man of success
but a man of value."***

As Einstein's fame grew, so did the demand for interviews, photographs, speeches, and writings. Einstein had mixed feelings about all this attention. These demands took up time that he could have spent on other things. He also knew that many people would misunderstand his ideas no matter how carefully he explained them.



***"You cannot simultaneously prevent
and prepare for war."***

Do You Know?

In the 1930s Einstein began to publish a series of articles for general audiences titled *The World as I See It*. The collection covered topics from war to liberty, to progress and education—not just science.

At the same time, Einstein knew that fame would help him bring his ideas to more people. The more speeches and interviews he gave, the more people would hear and try to understand the world as he saw it.

Einstein also knew that he could use his fame to draw attention to issues he cared about outside of science. One of Einstein's most deeply held beliefs was that war should be avoided. In 1914, he was one of only three scientists who signed a letter against Germany taking part in World War I. More than 100 scientists had signed a letter of support for the war. He also worked with international groups working for peace. He wrote often about his antiwar beliefs. When Germany began preparing for war again in the 1930s, Einstein continued to speak out.

Coming to America

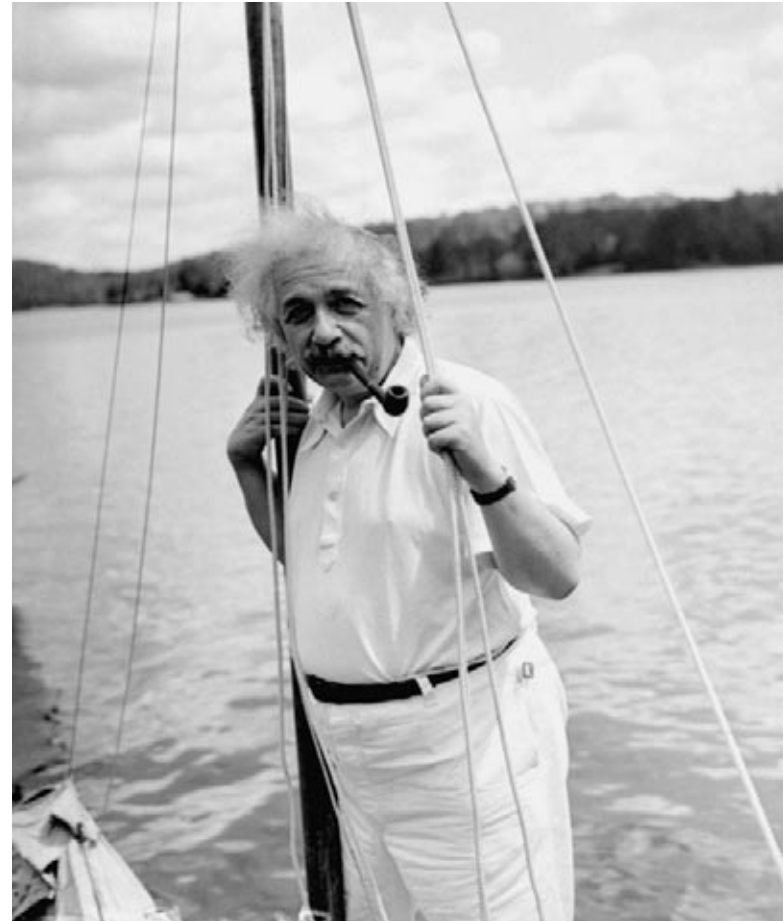


"The most important motive for work in school and in life is pleasure in work, pleasure in its result, and the knowledge of the value of the result to the community."

Despite the efforts of Einstein and others to promote peace, Germany moved closer to war in the 1930s. Einstein left Germany in 1933. He took a job at Princeton University in the United States.



Einstein meets with Jawarhalal Nehru, prime minister of India, at Einstein's home in Princeton, New Jersey in 1949.



Einstein enjoyed sailing, and often took his boat out on Princeton's Lake Carnegie.

Einstein and his family soon became part of Princeton's close-knit community. When out-of-town visitors wanted to know where he lived, townspeople would ask, "Are you expected?" This question kept strangers from bothering Einstein at home.

For the next 22 years, Einstein continued working to expand his ideas into new areas. He believed that he could develop a new theory that would unify his ideas with the latest theories. He worked as hard as he ever had, yet he never achieved the sort of breakthroughs he'd had during the "miracle year" or with his General Theory of Relativity. Despite the lack of new breakthroughs, he continued to give speeches, write articles, and meet regularly with fellow scientists.



Albert Einstein goes over matters with secretary Helen Dukas, who worked with Einstein from 1928 until his death in 1955.

Einstein's Influence



"Few are those who see with their own eyes and feel with their own hearts."

Einstein was not an inventor. Yet his curiosity led to the creation of many



useful products. For example, Einstein's ideas about light led scientists to develop new ways to control light.

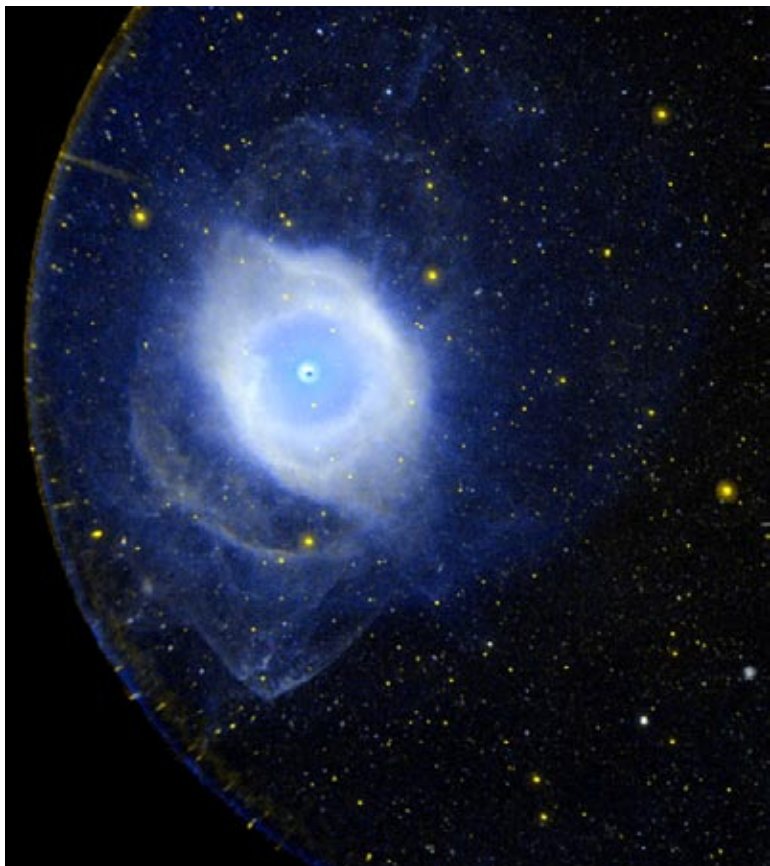
These developments eventually led to

television cameras, remote controls, and flat-screen computers. Einstein was also the first person to think of laser light. Laser light is now used in CDs, DVDs, and supermarket checkout equipment. His proof of the



existence of atoms and molecules led to the creation or improvement of a wide range of products. Those products include shaving cream, toothpaste, personal computers, portable phones, and more.



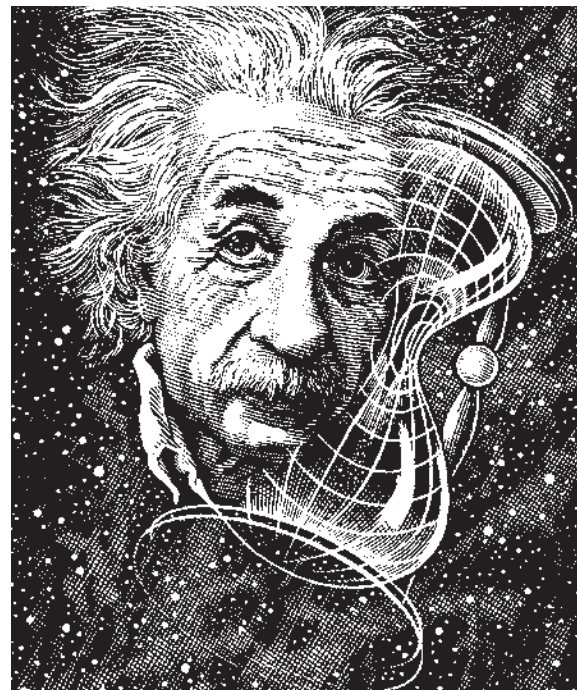


Einstein's theories provide scientists with a framework to study space objects, such as the Helix Nebula.

Einstein's scientific ideas continue to influence new theories. Current ideas about the origins of the universe, the nature of space, and strange objects called black holes all owe a large debt to Einstein.



"The important thing is to never stop questioning."



A Life Well Lived

Einstein once said, "The most beautiful experience we can have is the mysterious. . . . It is enough to try to understand a little of this mystery every day."

Until his death on April 18, 1955, Einstein's curiosity led him to work to understand nature's greatest mysteries. In doing so, he changed the way people think about time, space, energy, and matter—the foundation of the universe.

Glossary

algebra (<i>n.</i>)	a type of math that uses letters to represent numbers (p. 6)
astounded (<i>adj.</i>)	completely surprised; amazed (p. 11)
atoms (<i>n.</i>)	tiny pieces of matter (p. 10)
geometry (<i>n.</i>)	a type of math that studies points, lines, angles, surfaces, and solids (p. 6)
magnetic compass (<i>n.</i>)	a tool that shows which direction is north (p. 4)
molecules (<i>n.</i>)	the smallest parts of a substance that are still identifiable as that substance (p. x10)
mysterious (<i>adj.</i>)	not easily understandable (p. 22)
patent (<i>n.</i>)	a document that grants an inventor the right to make money from an invention (p. 8)
physics (<i>n.</i>)	the scientific study of matter and energy (p. 11)
solar eclipse (<i>n.</i>)	a period of time when the Moon blocks our view of the Sun (p. 13)
theories (<i>n.</i>)	possible explanations; in science, all theories are supported by evidence (p. 10)
universe (<i>n.</i>)	all things that exist in space (p. 4)

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Name _____

INSTRUCTIONS: In the first column, write what you already know about Albert Einstein. In the second column, write what you would like to learn about him. After you finish reading, fill in the third column with information you learned from reading the book and the fourth column with what you still want to know.

(K) What I Know	(W) What I Want to Know	(L) What I Learned	(S) What I Still Want To Know

Reading a-z

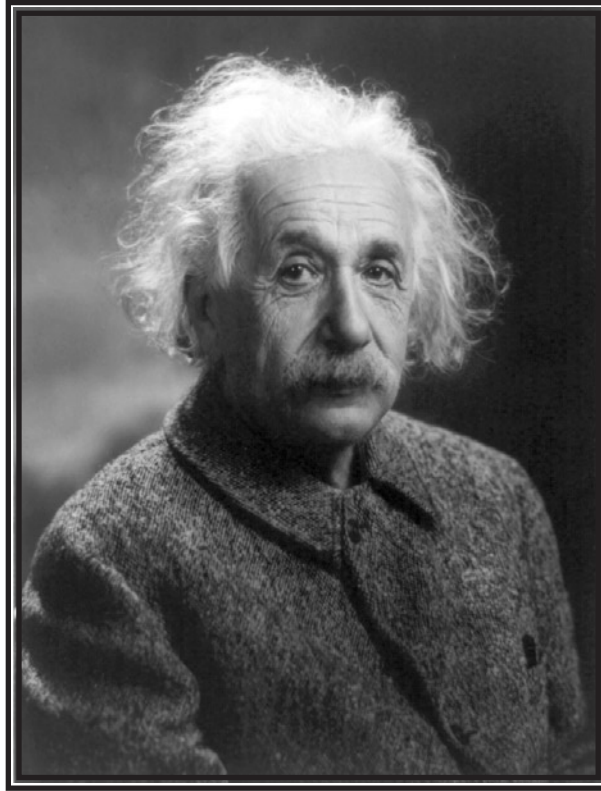
Book/Topic: _____

ALBERT EINSTEIN • LEVEL T • 2

SKILL: SEQUENCE EVENTS

Name _____

INSTRUCTIONS: In the sentences below, circle the adjectives and adjective phrases. Then underline the noun or nouns they describe.



ALBERT EINSTEIN • LEVEL T • 3

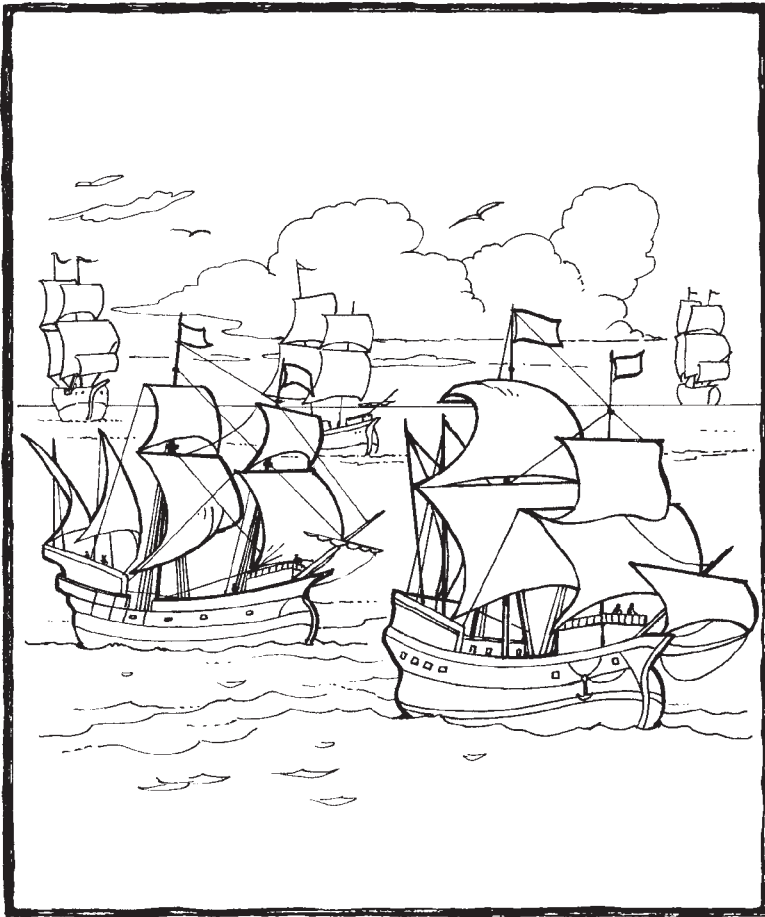
1. Einstein was a well-taught individual with unique ideas.
2. The great ideas came from a curious 26-year-old patent clerk.
3. A well-known professor of physics began to teach Einstein's new ideas.
4. He finally received an offer for a full-time job at a prestigious university.
5. They soon became part of Princeton's close-knit community.
6. Out-of-town visitors wanted to know where the great man lived.
7. Einstein was an intelligent, German-born man.
8. He could be highly self-critical.
9. Einstein's ideas about what light is and how it behaves led scientists to develop new technology such as flat-screen computers.

SKILL: COMPOUND ADJECTIVES

Ships of Discovery

A Reading A-Z Level T Leveled Reader

Word Count: 1,686



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Ships of Discovery

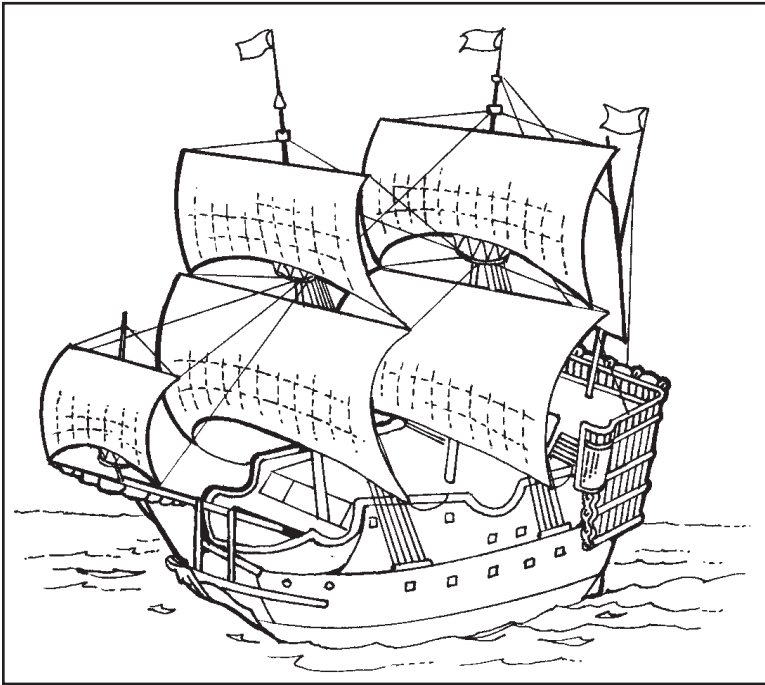


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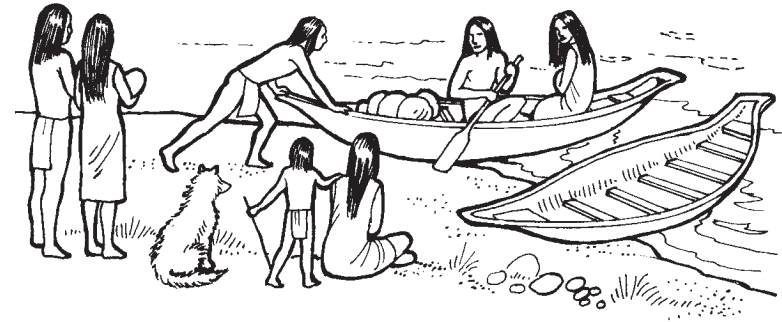
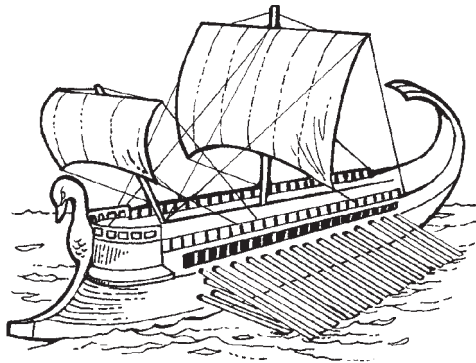
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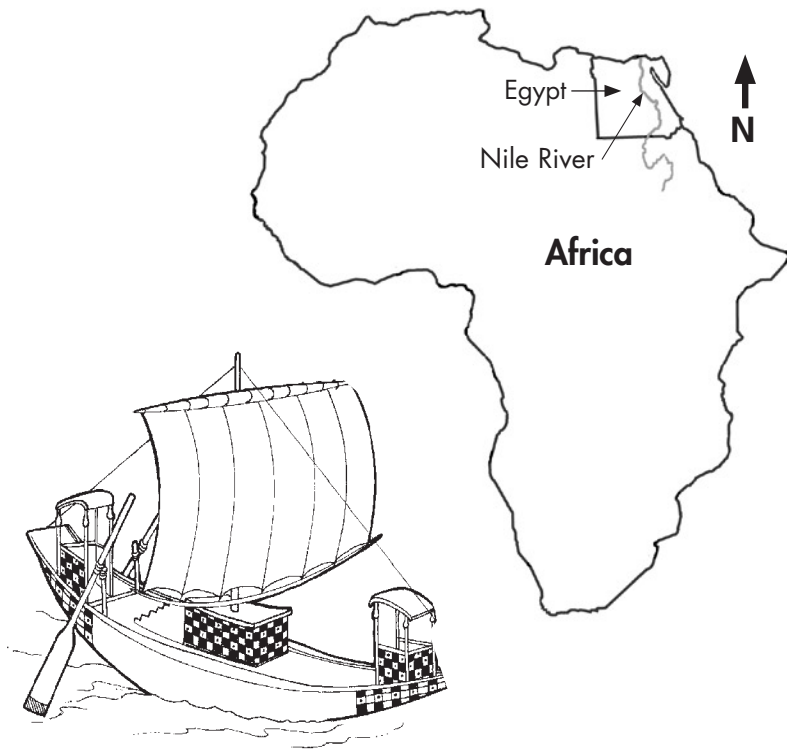
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Introduction

People often settle along rivers, lakes, and seas. Long ago, people who lived near large bodies of water were curious about what was beyond the horizon. They also thought that traveling over water might be easier than traveling over land. These thoughts led to someone making a simple boat.

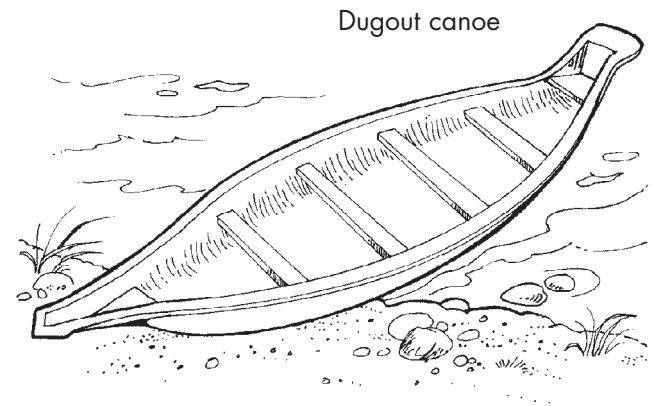
As boats and ships became more practical, people were able to travel farther from home. New types of boats were an improvement over the previous boats. They often were safer, carried more cargo, and were more comfortable. Up until about 150 years ago, boats were the main means of carrying goods and people from place to place. Let's look at how boats were used to explore the world and how they have changed over time.



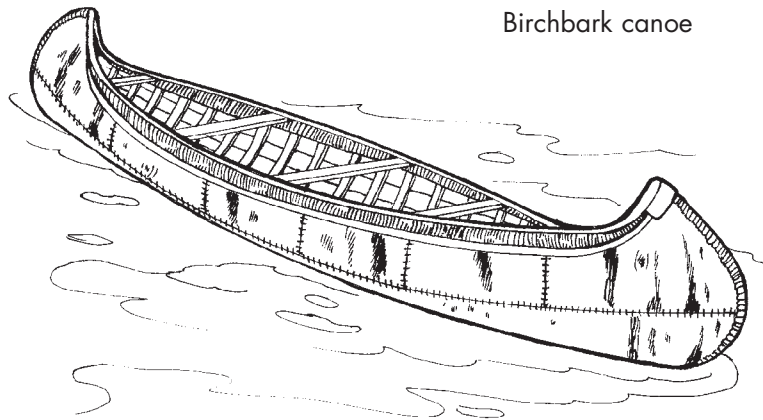
Early Years

The oldest record of sea travel comes from Egypt. More than 6,000 years ago, Egyptians took to the water. They built boats by carving out the trunks of trees. But the Egyptians were not the only people to make boats from trees. Many other **cultures** that looked for ways to cross the water also carved boats from trees. These were sturdy boats, but they couldn't carry very much.

Over time, people wanted to move larger things over waterways. They wanted to build boats to carry many people as well as food, animals, and other items to trade. Canoes made from oak trees were good boats for crossing a lake or going down a river. However, they didn't work as well for carrying large things. Imagine trying to row a canoe across a lake with six sheep crammed around you. The space just wasn't big enough.



Humans have always been driven to improve things. So it was natural that long ago people looked for ways to build bigger, faster, and safer boats. People also realized that they needed better boats to explore places far from their homeland.

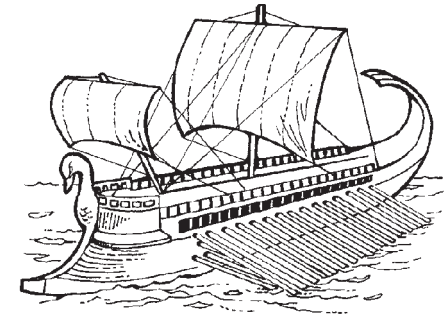


Birchbark canoe

The next step in boat building was using wooden beams to make a frame. The frame was then covered with wooden planks or bark from trees. Some cultures even used animal skins stretched over the frame. These boats were bigger and more **streamlined** and able to hold more cargo.

The Egyptians were the first to cover a wooden frame with long, flat pieces of wood to create a hull (the outer shell of a boat). Some of their boats were as long as 21.3 meters (70 ft). The Egyptians were also the first to use sails. Sails reduced the need for people to row the boats. Some larger boats used both rowers and sails.

Soon, the Greeks and other peoples around the Mediterranean Sea were building large boats powered by sails. About 3,000 years ago, sailing ships were built with two masts, each one carrying a sail. The addition of a second mast made ships easier to steer and also made them much faster.



Greek ship

Five hundred years later, the Greeks developed a ship with four sails. This ship was safe enough to leave the Mediterranean Sea and travel down the west African coast.

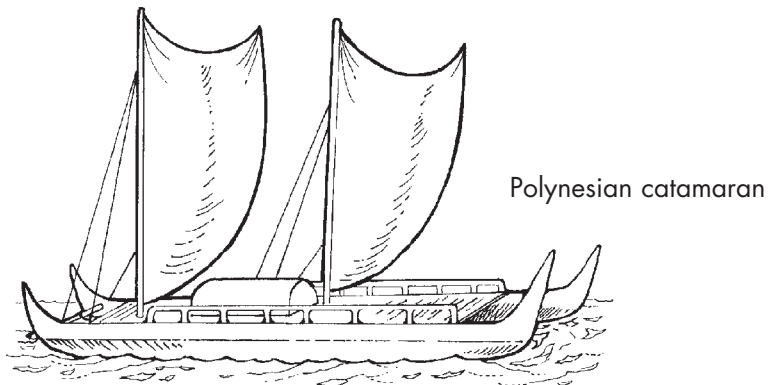
Some of the fastest ships at the time were built for battle. Some warships had as many as three levels of rowers on each side.

These larger ships allowed people to travel to and explore distant places. During this period, exploration and trade moved beyond the Mediterranean Sea.

The Polynesians

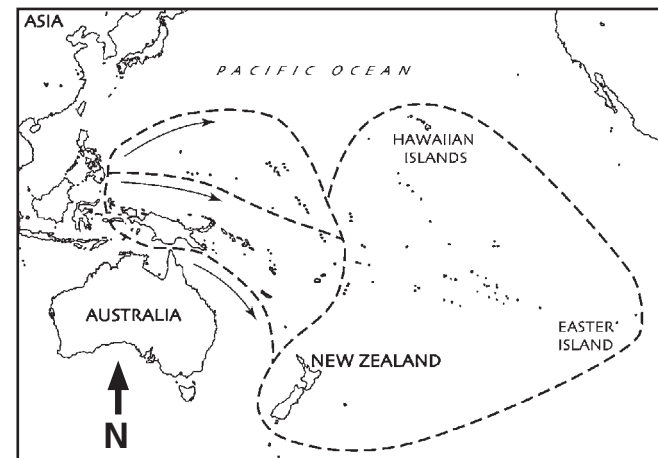
In the South Pacific, groups of Pacific Island peoples were building boats that could sail in the open ocean. Over 3,500 years ago, these people were traveling east, well beyond the islands where they lived. They also explored areas off the Asian mainland.

These Polynesian sailors built a boat that was an early version of the modern **catamaran**. They took two canoes and connected them using large wooden poles. A deck was then built to span the poles. These boats were usually about 15 to 18 meters (50 to 60 ft) long. The central deck held masts for sails and had enough space for several people and their supplies during a long voyage.



These early boats provided a means of safe travel from one island to another. The Polynesians settled each new island they discovered. By the beginning of the year AD 1000, they lived on nearly every island they could find in the Pacific Ocean. Their new homes included Hawaii, New Zealand, and Easter Island.

The Polynesians were skilled sailors. They became so familiar with the ocean that they could tell their location by the size and shape of the waves. They could easily travel great distances by going from island to island. The Polynesians grew to accept sea travel as a way of life.



Routes of Polynesian expansion

The Vikings

More than 1,300 years ago, a group of people in another part of the world began to build larger boats. These people were the Vikings.

They lived in the northern part of Europe.

The Vikings were well known as warriors and conquerors. The Vikings were **accustomed** to traveling over water. By the year AD 700, they were sailing boats that were better than any others on the ocean.

The boats they built, called **knarrs**, were used mostly for trading. These boats were up to 16.5 meters (54 ft) long and 4.5 meters (15 ft) wide.

Because they were flat bottomed, the knarr boats could carry heavy loads. They were also stable and could travel safely across the open ocean. Viking explorers were willing to travel into the unknown to claim new lands and seek adventure. They were also the first Europeans to visit North America.



Viking
knarr

Vikings also built warships known as longships. It often was difficult to tell if a longship was coming or going because they looked the same in the front and in the back. Using this design, Viking attackers could easily change direction. Longships were able to travel as fast as 15 **knots**. A knot is a way to measure speed on water. Some of the larger longships carried as many as 200 warriors. The combination of large, speedy, easy-to-handle ships and a fierce fighting spirit made the Vikings tough to defeat. The Vikings ruled the ocean for nearly three centuries.

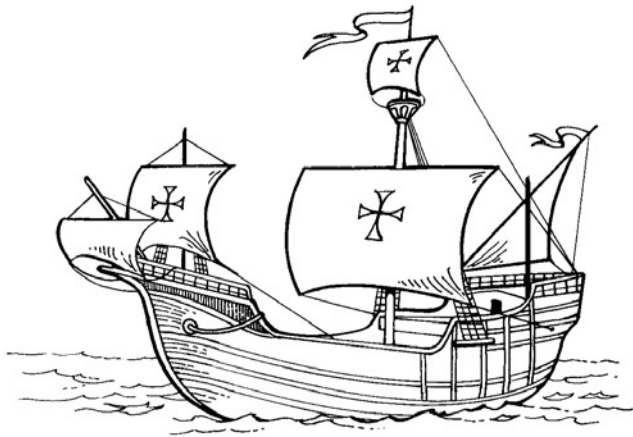


Viking longship

Age of Discovery

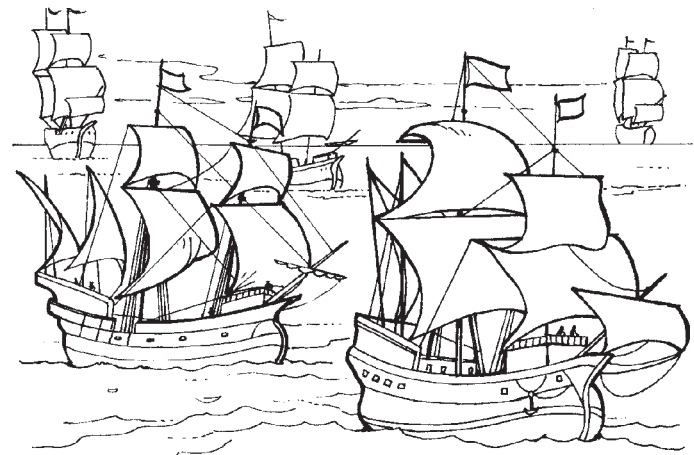
Until the 1400s, most sailors still kept close to their home waters. But with the coming of the Age of Discovery, things changed dramatically. Every European sailing country wanted to find new lands. The race was on, and the Americas were the prize.

Shipbuilders had to find ways to build faster and safer ships. In the 1400s and 1500s, Christopher Columbus and other explorers used small, sturdy ships known as **caravels**. These ships had three masts to carry sails. This design made the ships fast and easy to steer. Caravels had square sails on the front and the middle masts and a triangular-shaped sail on the back mast.



The largest of Columbus's ships was 27.4 meters (90 ft) long and 9.1 meters (30 ft) wide. Compared to modern ocean liners and cargo ships, caravels were tiny. But even though they were quite small, the explorer Ferdinand Magellan set out to sail five caravels around the world with a crew of 260 sailors.

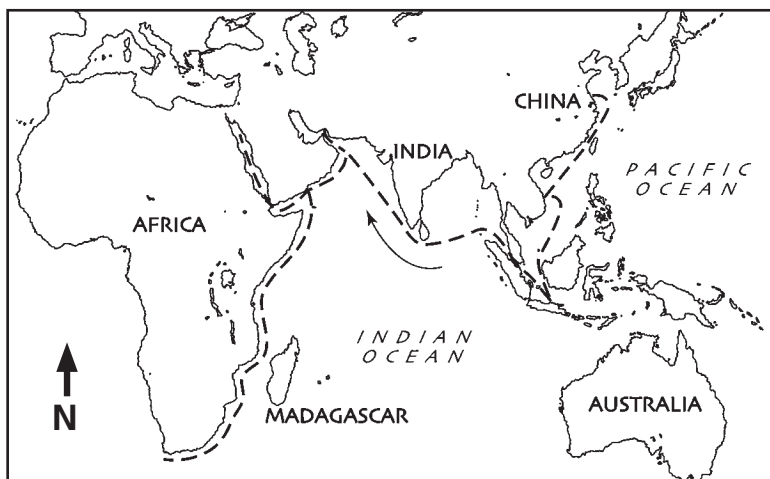
Almost three years after they began the trip, one of Magellan's ships and eighteen of the original crew members made it around the world. Magellan was not one of the survivors. He was killed somewhere in the Philippine Islands.



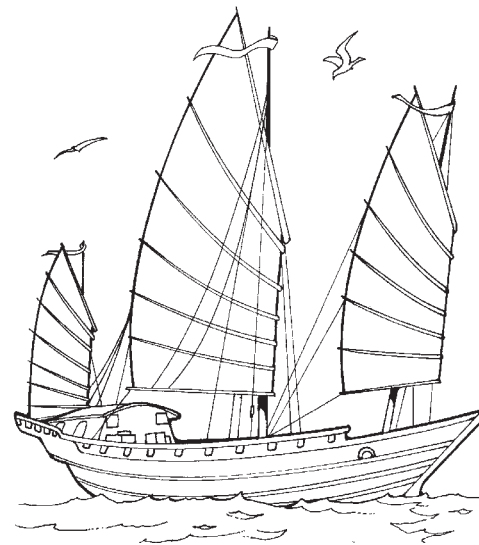
Magellan's ships

The Chinese

While European explorers were sailing the world, the Chinese had also taken to the sea in another part of the world. They were skilled sailors. Their most famous explorer, Zheng He, traveled in a fleet of sixty-two ships that were much larger than European ships. His largest ship was so big that it could have held all three of Columbus's ships on its deck. This huge ship was 121 meters (400 ft) long and 45.7 meters (150 ft) wide. In addition to the sixty-two main trading ships, more than a hundred smaller support boats were in the fleet. These Chinese explorers sailed all the way to Africa to trade.



Route of Chinese exploration and trading



Chinese junk

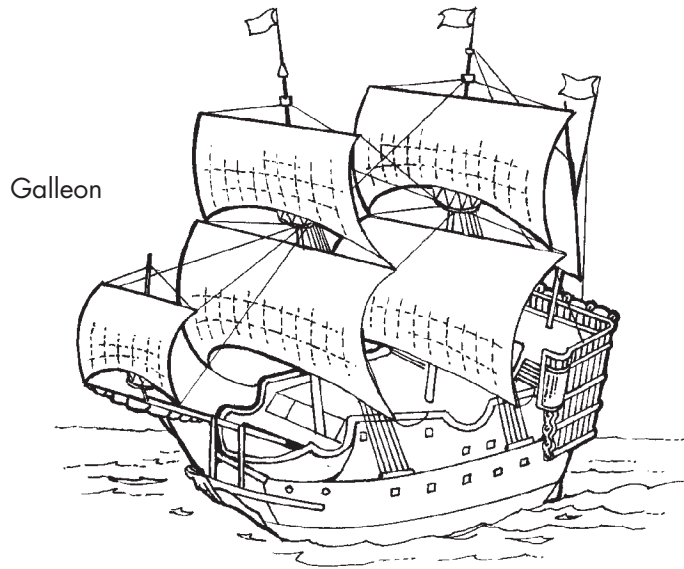
War with their Asian neighbors caused the Chinese to turn their attention away from exploration. If they had continued, we might be studying how China discovered America. And North and South Americans might be speaking Chinese instead of French, English, and Spanish.

Do You Know?

Christopher Columbus's entire crew was about 90 sailors on three ships. The Chinese explorer Zheng He had more than 162 ships and 30,000 sailors on one of his voyages.

Later Years

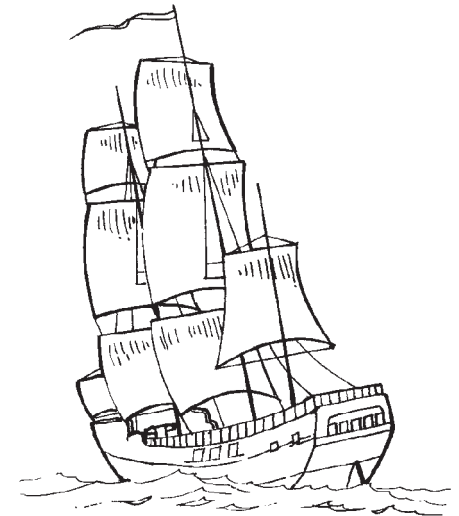
As sea exploration continued, the Spanish led the way. By the 1500s, European ship designs had improved. The newest ships, called galleons, were larger, faster, and more comfortable. These vessels were as long as 42.7 meters (140 ft), but were still small compared to the Chinese ships. Many of them had nice, comfortable living quarters. Galleons were capable of serving both as trading vessels and warships. Because of their size, galleons were able to carry many cannons on board, making them dangerous in battle.



Galleon

In the late 1700s, Captain James Cook undertook some of the greatest explorations of his time. On his first ship, the *Endeavour*, Cook sailed around the world. His ship was only 32 meters (105 ft) in length. It was smaller than many other ships and had a shallower draft, sitting only 4.3 meters (14 ft) deep when fully loaded.

Cook was not only a great sailor, but he also knew how to keep his crew healthy. He made them eat certain foods, such as limes and cabbages, to remain free from disease. Until Cook's time, up to one-half of the crew on a long voyage would die of **scurvy** or other diseases. Cook knew his success as an explorer depended on keeping his crew healthy.

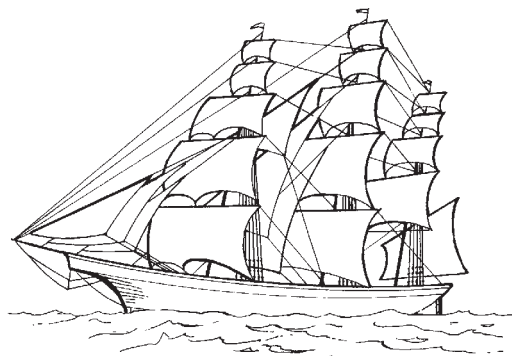


The Endeavour

Conclusion

By the middle of the 1800s, sailors had explored and mapped most of the world's coasts. As people settled farther from their homelands, better ships were needed to move people and supplies great distances. Fast ships called clipper ships carried people across oceans in a matter of days. Some of these ships had as many as thirty-five sails. In only a few years, however, the steam engine would replace wind power, ending the age of sailing ships.

When we look at some of the ships used by early explorers to sail across oceans, we have to admire their courage. Explorers and their ships of discovery helped create the world we live in.



Clipper ship

Glossary

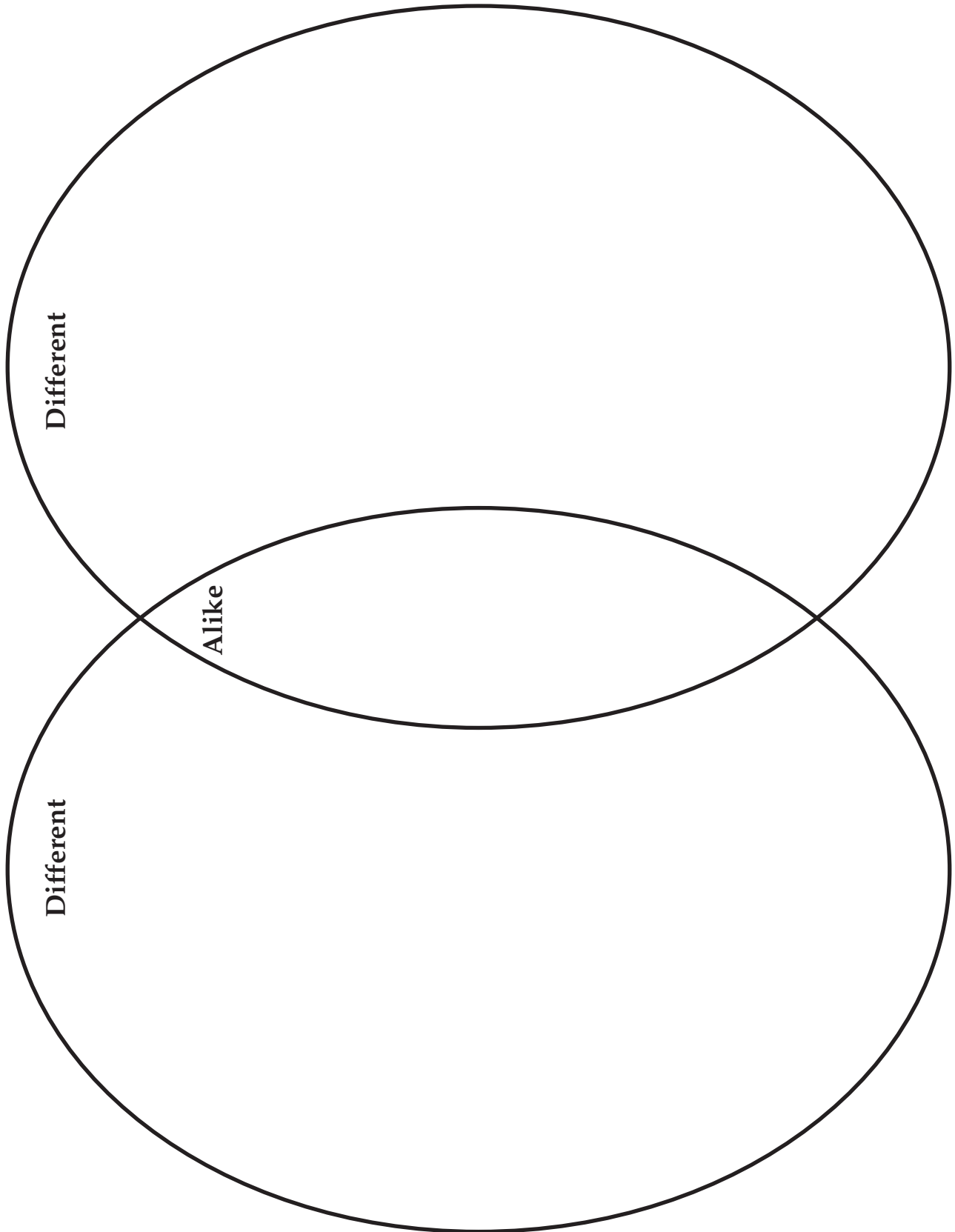
accustomed (<i>v.</i>)	familiar with because of use or practice (p. 11)
caravels (<i>n.</i>)	small sailing ships from the 1400s and 1500s (p. 13)
catamaran (<i>n.</i>)	a sailing vessel with twin hulls and a deck connecting the hulls (p. 9)
cultures (<i>n.</i>)	the ideas and customs of groups of people from different parts of the world (p. 5)
knarrs (<i>n.</i>)	Viking merchant ships (p. 11)
knots (<i>n.</i>)	units of measurement of a ship's speed equal to one nautical mile per hour (p. 12)
scurvy (<i>n.</i>)	a life-threatening illness common to early sailors that was caused by a lack of vitamin C (p. 18)
streamlined (<i>adj.</i>)	designed to move easily through air or water (p. 7)

Name _____

Instructions: Compare and contrast Spanish galleons and Chinese junks. Write in the two topics you are comparing on the lines below. Write the details that tell how the topics are different in the outer circles. Write details that tell how the topics are alike where the circles overlap.

Topic: _____

Topic: _____



Name _____

Instructions: Write a sentence for each of the following nouns. Include at least two adjectives to help describe the noun.

ship

water

sailor

world

mast

sails

cabbage

deck

lime

car

Name _____

PART 1 INSTRUCTIONS: Match words from the left-hand column with words from the right-hand column to create compound words found in *Ships of Discovery*. Then write the compound words you created on the lines below.

water

lined

home

where

stream

two

main

shaped

New

Islands

flat-

ships

North

land

some

Zealand

triangular-

ways

Philippine

land

sixty-

America

ship

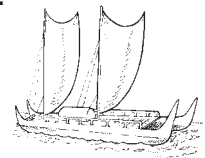
bottomed

clipper

building

PART 2 INSTRUCTIONS: Think of other compound words you know, and write them in the box.

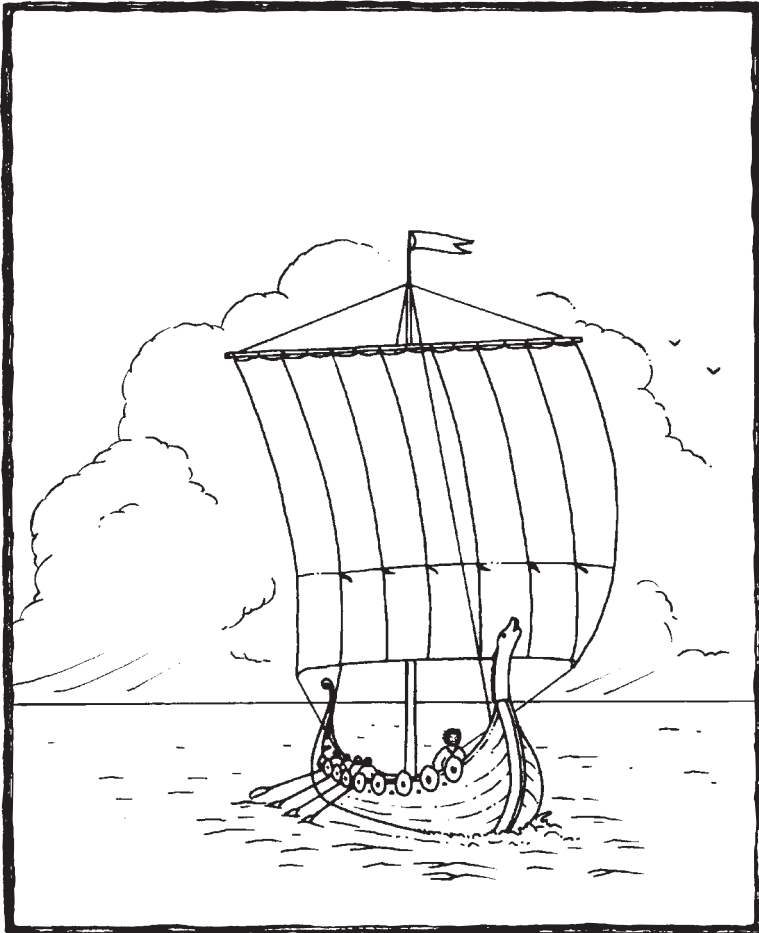
EXAMPLE: rainbow, birthday



Vikings

A Reading A-Z Level T Leveled Reader

Word Count: 1,359



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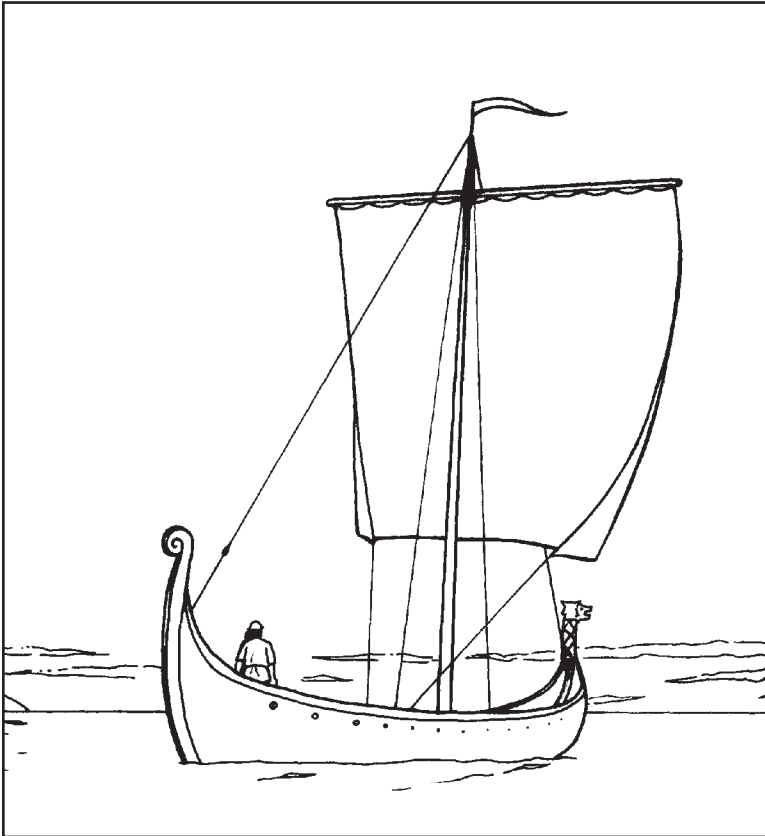


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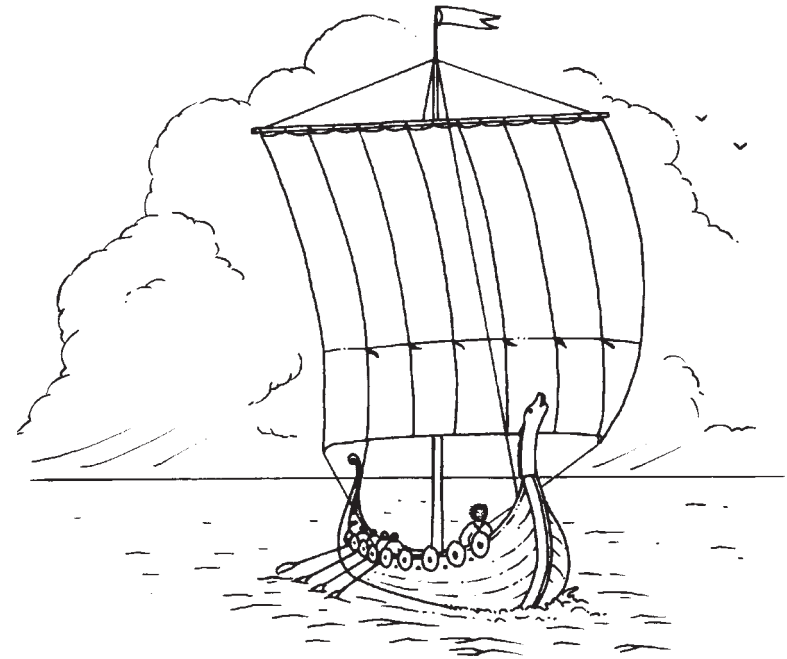
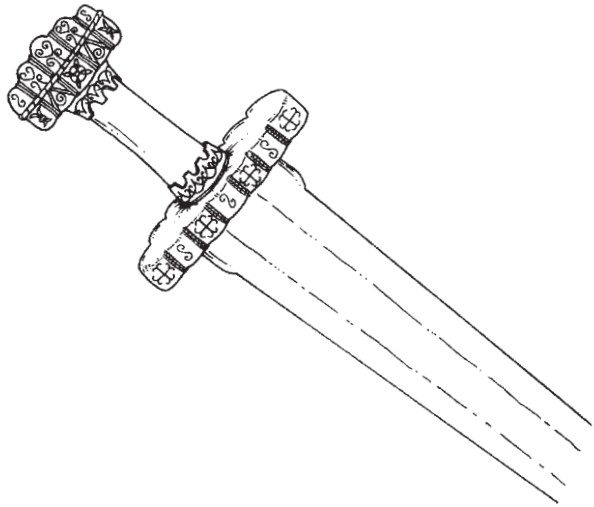
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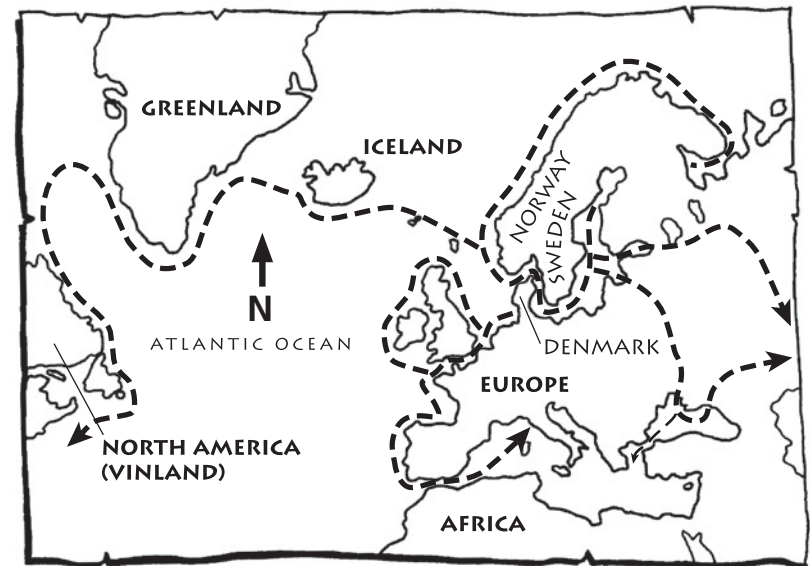
INTRODUCTION

When you hear the word *Vikings*, do you think of warriors or do you think of explorers? Do you think of merchants or do you think of poets? The Vikings were all of these things. They were also scientists, farmers, and fisherfolk. They were courageous fighters who loved to explore the world.

The Viking Age began about twelve hundred years ago. The Vikings came from the coastal lands in northern Europe that are now the countries of Norway, Sweden, and Denmark. The Vikings were used to cold weather and learned to sail and fight at an early age. Their ships were fast and could carry many warriors.

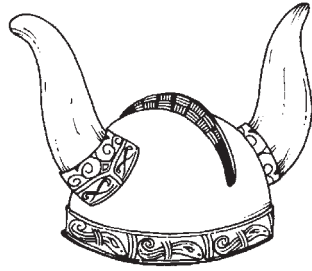


Over time, the Vikings' spirit of exploration and adventure led them to places all around Europe. It even led them to discover new lands that no one in Europe knew existed. They seized land along the western coast of Europe. They even **conquered** land along the Mediterranean Sea. Vikings also went east into what is now Russia. Some Vikings sailed far west over the ocean, eventually reaching North America. And they did so hundreds of years before Christopher Columbus was even born.



----- Viking expansion routes

The Vikings' navigation skills, courage, and sturdy ships led them to discover and develop rich new lands.

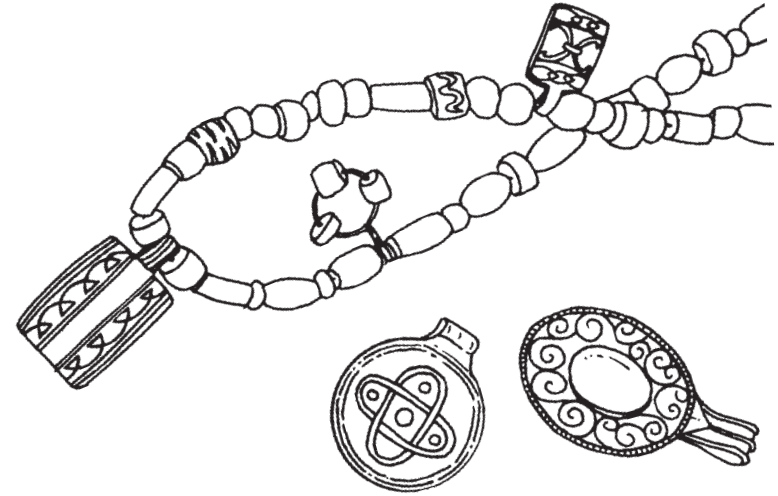


VIKING WARRIORS

Vikings are often pictured as tall, muscular people wearing helmets with horns. In fact, many Viking helmets were decorated, but they most likely did not have horns. Metal helmets were expensive, and leather caps and shields were a much more common form of defense. Some Vikings also used **mail** shirts for protection.

The spear and the axe were the most common Viking weapons. Many warriors also used swords, knives, or bows.

Berserkers were special Viking warriors who fought without wearing any armor. They often wore the skins of bears or wolves and fought in a rage so great that they would ignore any wounds they received during battle.



The Vikings liked to tell stories and create poems about their achievements and battles. Many of these Viking tales have been preserved in heroic tales known as **sagas**.

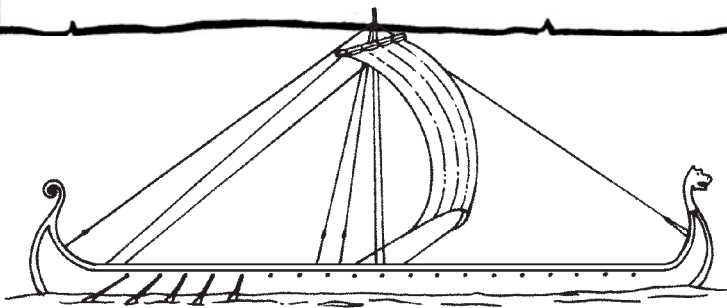
In Viking culture, land was handed down from a father to his firstborn son. Younger sons received no land. They could either work for the oldest brother or strike out on their own to seek fame and fortune elsewhere. Most young Viking men were well trained as warriors. Many of them did not want to work on the land of the oldest brother. The stories of rich lands within sailing distance drew them away from their homeland.

Viking warriors invaded other countries with quick attacks from the sea. Their fast boats were called *dragons* because they often had a carved dragon's head rising from the bow. The dragon's head warned others of the fierce warriors on board.

Despite all the stories about the warlike Vikings, not all Vikings were warriors or stayed warriors. Viking warriors often settled down to live peacefully in the lands they conquered. They became farmers or traders. These former warriors lived much like other people of those lands. They became peaceful citizens.

Do You Know?

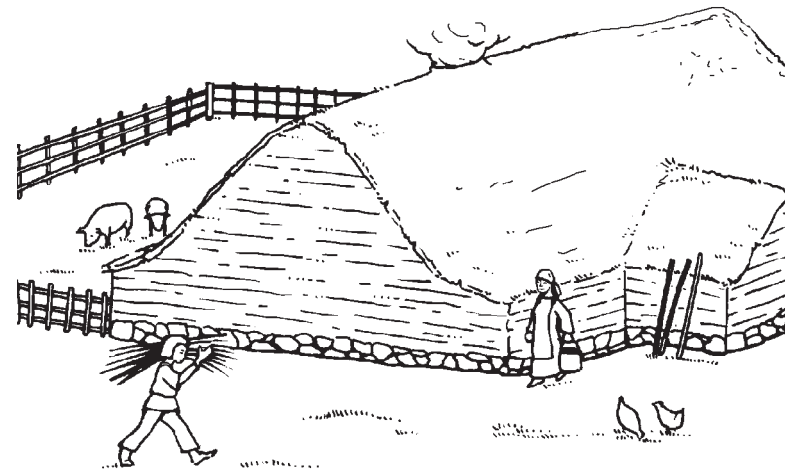
Viking longships were built with the same shape at both ends. Vikings could jump in the ship and row away from shore. They didn't have to turn the ship around to leave.



DISCOVERING A NEW LAND

One brave Viking, Gardard Svavarsson, sailed beyond the seas where other Europeans had settled. His travels took him far to the north and west. After many days at sea, he found a large island. Today, the island he discovered is known as Iceland.

Iceland became the home for people who were **banished** by the first king of Norway. At that time, Norway was ruled by a very strict king. His rules were harsh. Many people were unhappy. The king feared being attacked by these people. He ordered anyone who wouldn't follow his rules to leave Norway.



These families left Norway and many sailed to Iceland. They built a village there. Within fifty years, four hundred people lived in this new island country.

The new settlers in Iceland wanted choice in their lives. They didn't want a king. They created a **democracy**. In a democratic government, people can vote. People vote on ideas, laws, and rulers. Usually the idea or person with the most votes wins. Iceland continued to attract strong, brave people. Iceland eventually grew to become one of the happiest and most successful countries in the world.

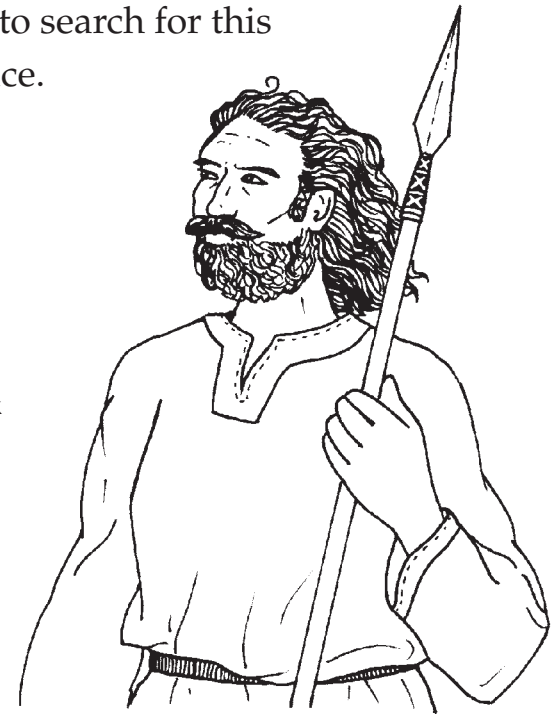


ERIC THE RED

To many people, Iceland seemed an **ideal** place to live. But not everyone fit in there. Most people in Iceland wanted a peaceful life. One man, named Eric the Red, was often in trouble with the authorities. One day he killed three men in a fight. The officials of Iceland grew tired of Eric and ordered him to leave.

Eric decided to look for a new home. He had heard rumors of a new land even farther to the west than Iceland. He sailed off to search for this unknown place.

Eric the Red was named for his thick red hair.

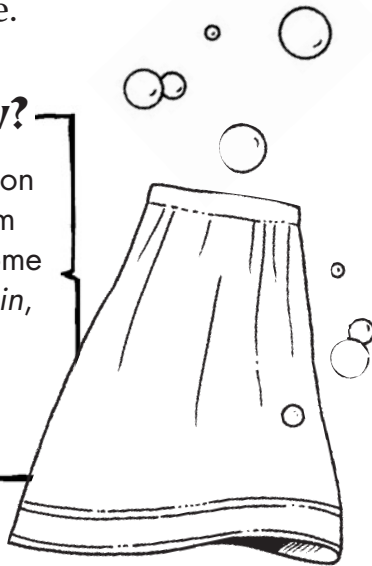


Eric the Red found the new land after only two days! He wanted other people to come to live there, so he told them stories about how green it was. He named this new land he had found *Greenland*.

He led a group of twenty-five ships full of people who wanted to live in Greenland. The seas were very rough, and several ships sank, while others were forced to turn back. Fourteen ships arrived safely. The people built two new communities. They set up a democratic government as they had in Iceland. Within ten years nearly 3,000 people had come to live in Greenland. Today, about 56,000 people live there.

Do You Know?

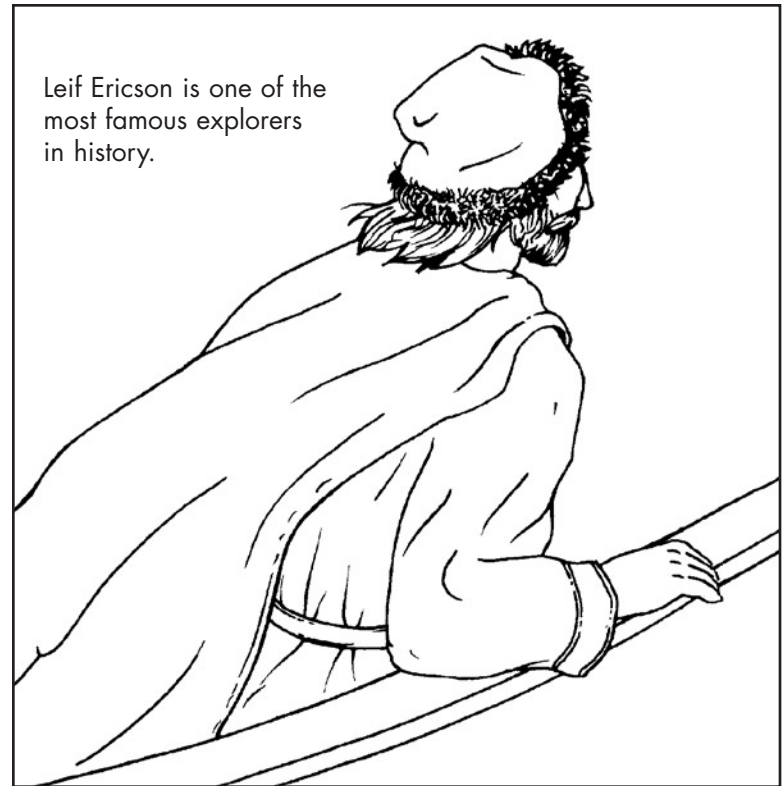
Nine hundred common English words come from the Viking language. Some of the words are *sky*, *skin*, *scrape*, *skirt*, *husband*, *bubble*, and *window*.



LEIF ERICSON

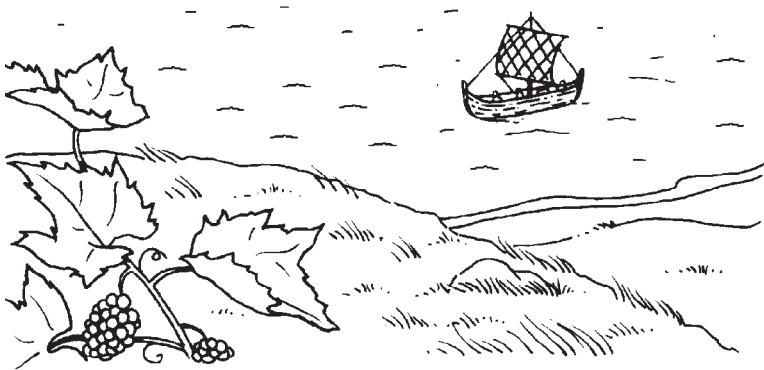
Perhaps the most famous Viking was a son of Eric the Red. His name was Leif (pronounced *leaf*). Since he was the second son, he wasn't given land to farm from his father. Family farms went to the oldest sons. Leif wasn't sure what he wanted to do with his life. He decided to sail to Norway to look for work.

Leif Ericson is one of the most famous explorers in history.



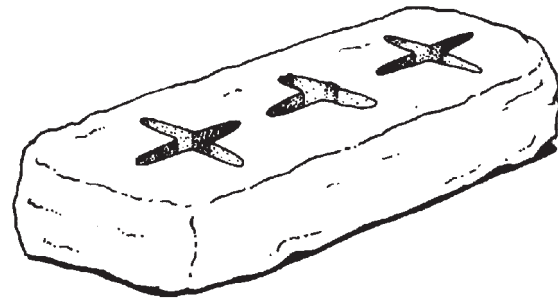
While in Norway, Leif heard a strange story. A trader said his ship had been caught in a bad storm. He had been blown far off his course. While trying to find his way back home, he got lost. He saw a coast that wasn't on his map. He didn't know exactly where he had been. But the trader described the coast clearly.

Leif Ericson bought the man's ship. He and a small crew sailed to find this mysterious coast. One day, they saw a place that looked like the coast the man talked about. They found vines with fruit growing there, so they called the place *Vinland*. Today, no one knows exactly where Vinland was. But **archaeologists** have discovered a small Viking outpost in Newfoundland, Canada, that was settled at about this time.



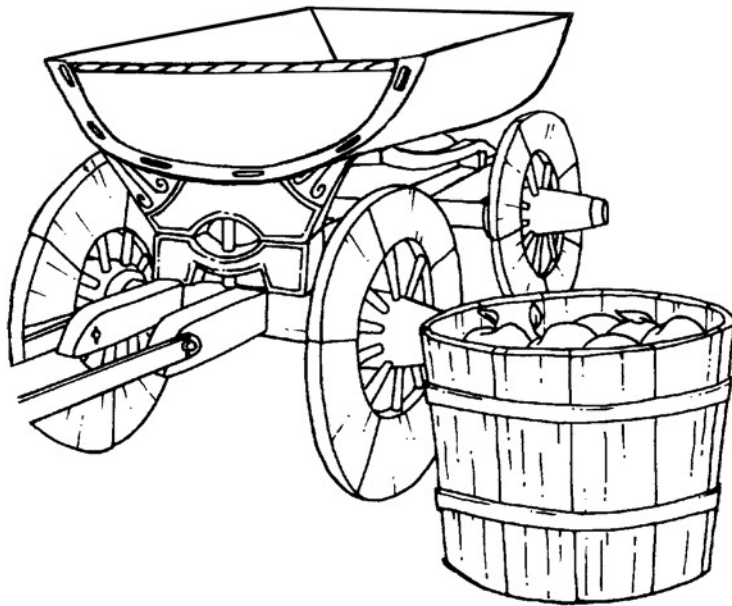
Leif and his crew built a house. They spent the winter in Vinland. On the way home the next year, they found a wrecked trading ship. As a reward for saving the crew, Leif was given all the ship's cargo. People started to call him Leif the Lucky. But after that adventure, Leif stayed home. Leif never went on another voyage.

Two years later, his younger brother asked a favor. He wanted to borrow Leif's ship. He wanted to see for himself this new land that Leif had found. Leif's brother and his crew explored the coast of Vinland for over two years. They used Leif's former winter house as a base.



This stone was used as a mold to make both metal Christian crosses and the Hammer of Thor symbol (the center shape). Thor was a powerful Viking god.

Some of their explorations were tragic. Their arrival frightened the native people. Small fights happened. But then, men from the ship's crew killed several native fishermen without reason. Striking back a few days later, angry native men attacked a group of Vikings. In the fight, Leif's brother was wounded by an arrow. He died there, and his body was buried in Vinland. He became the first European known to have died and been buried in North America.

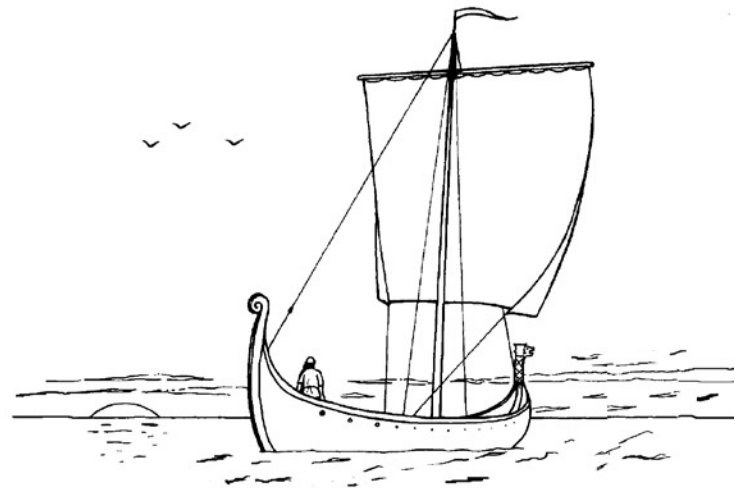


Wagons, furniture, horses, and foods were some of the items known to have been buried with their Viking owners.

OTHER VIKING CONQUESTS

For about 275 years, the Vikings swept across Europe in wave after wave. Many were hungry to fight and greedy for riches. They built trade stations along European rivers all the way to the Mediterranean Sea. Viking explorers and raiders even traveled to the Middle East and Asia.

The Vikings were very skilled. They could do many things well. They were great warriors, sailors, and explorers. Their conquests left lasting marks on world history. They will always be remembered for their bravery and strength in battle as well as for their explorations of new lands.



TIMELINE IN VIKING HISTORY

Year	Events
790s	Viking raids in Europe, including Scotland and Ireland, begin
793	Viking raid on Lindisfarne monastery
844	Viking raids on Spain
845	Conquest of Hamburg and Paris
856–7, 861	Paris conquered by the Vikings
870–930	Norse settlement in Iceland
880s	Harold Finehair attempts to unite Norway
885–6	Siege of Paris
902	Vikings expelled from Dublin
911	Foundation of Normandy by Viking chieftain Rollo
912	Viking raiders on the Caspian Sea
917	Refoundation of Viking Dublin
930	Foundation of the Icelandic Althing
980s	Conversion of Russia
985	Eric the Red settles in Greenland
1000	Iceland converted to Christianity; voyages to Vinland
1066	Battle of Stamford Bridge, Battle of Hastings, Norman conquest of England
1066–87	William the Conqueror, king of England
1091	Norman conquest of Sicily

GLOSSARY

archaeologists (<i>n.</i>)	people who study ancient cultures (p. 15)
banished (<i>v.</i>)	to be banned from one's country (p. 10)
berserkers (<i>n.</i>)	special Viking warriors who wore animal skins and fought recklessly in battle (p. 7)
conquered (<i>v.</i>)	attacked another country or group and won control of the land (p. 6)
democracy (<i>n.</i>)	a form of government that is run by the people through free and frequent elections (p. 11)
ideal (<i>adj.</i>)	perfect; couldn't be better (p. 12)
mail (<i>adj.</i>)	armor made from metal rings linked together (p. 7)
sagas (<i>n.</i>)	stories written in Iceland during the Viking Age about heroes and their adventures (p. 8)

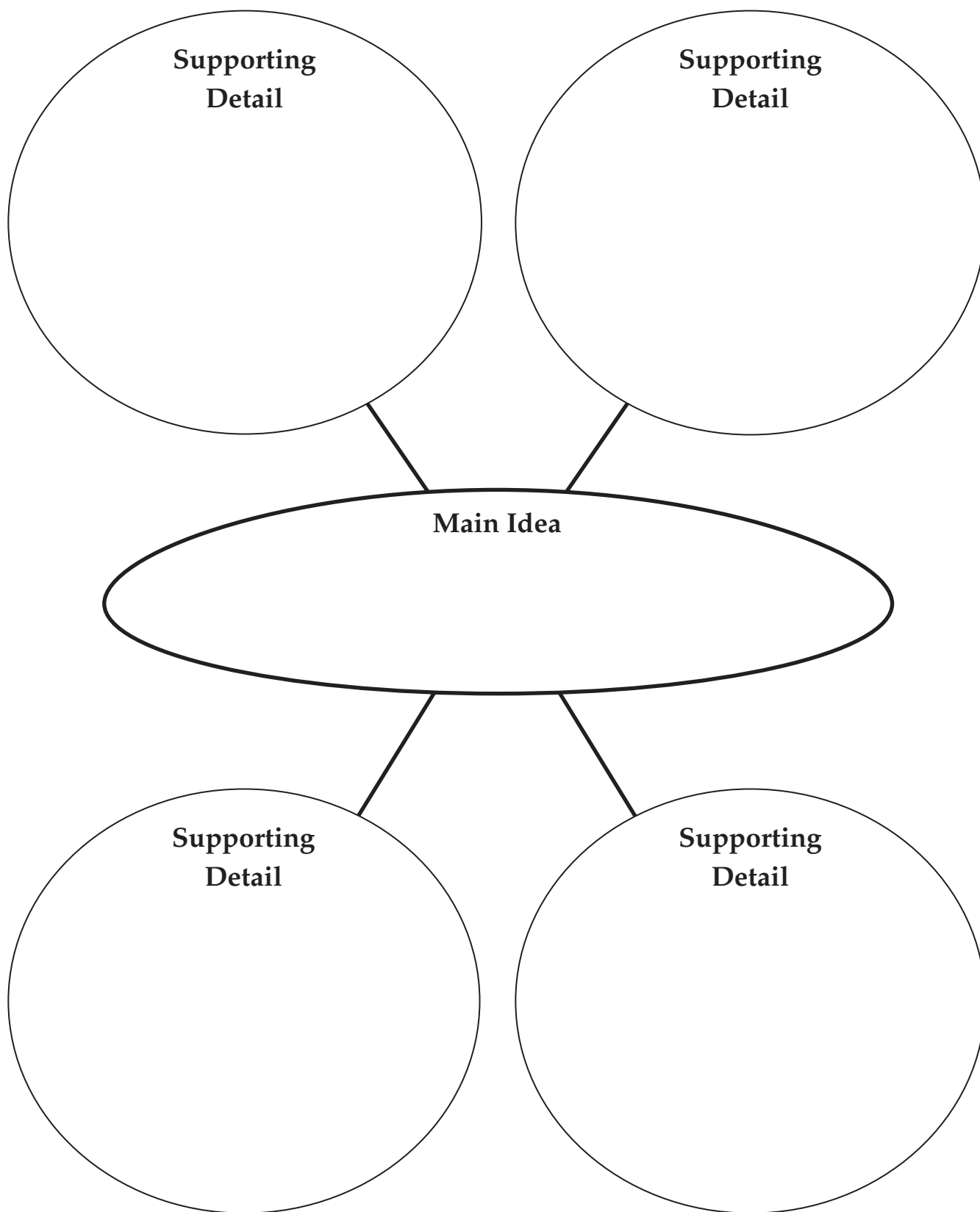
Name _____

Instructions: In the first section, write what you already know about the Vikings. In the second section, write what you would like to learn about them. After you finish reading, fill in the third section with information you learned from reading the book and the fourth section with what you still want to know.

K: What I Know
W: What I Want to Know
L: What I Learned
S: What I Still Want to Know

Name _____

Instructions: Reread the section titled "*Leif Ericson*". Write the main idea in the center of the web. Record the supporting details in the surrounding circles.



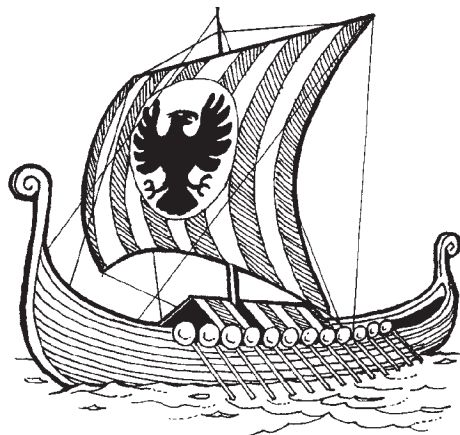
Name _____

Instructions: In the text below, circle the letters that should be capitalized. Use a red pencil to circle the letters that should be capitalized as proper nouns. Use a blue pencil to circle the letters that should be capitalized to mark the beginning of a sentence or the name of a chapter.

vikings

the viking age began about twelve hundred years ago. the vikings came from the coastal lands in northern europe that are now the countries of norway, sweden, and denmark. the vikings were used to cold weather and learned to sail and fight at an early age. their ships were fast and could carry many warriors.

over time, the vikings' spirit of exploration and adventure led them to places all around europe. it even led them to discover new lands that no one in europe knew existed. they seized land along the western coast of europe. they even conquered land along the mediterranean sea. vikings also went east into what is now russia. some vikings sailed far west over the ocean, eventually reaching north america. and they did so hundreds of years before christopher columbus was even born.



Name _____

Instructions: Follow the instructions in each section below.

A. Synonyms

Write synonyms for the following words.

rugged		bigger	
fast		majority	
conquered		rescued	

B. Antonyms

Write antonyms for the following words.

mean		important	
great		older	
surprise		returned	

C. Sentence Construction

Choose four of the words from A and B and use them in a paragraph.

